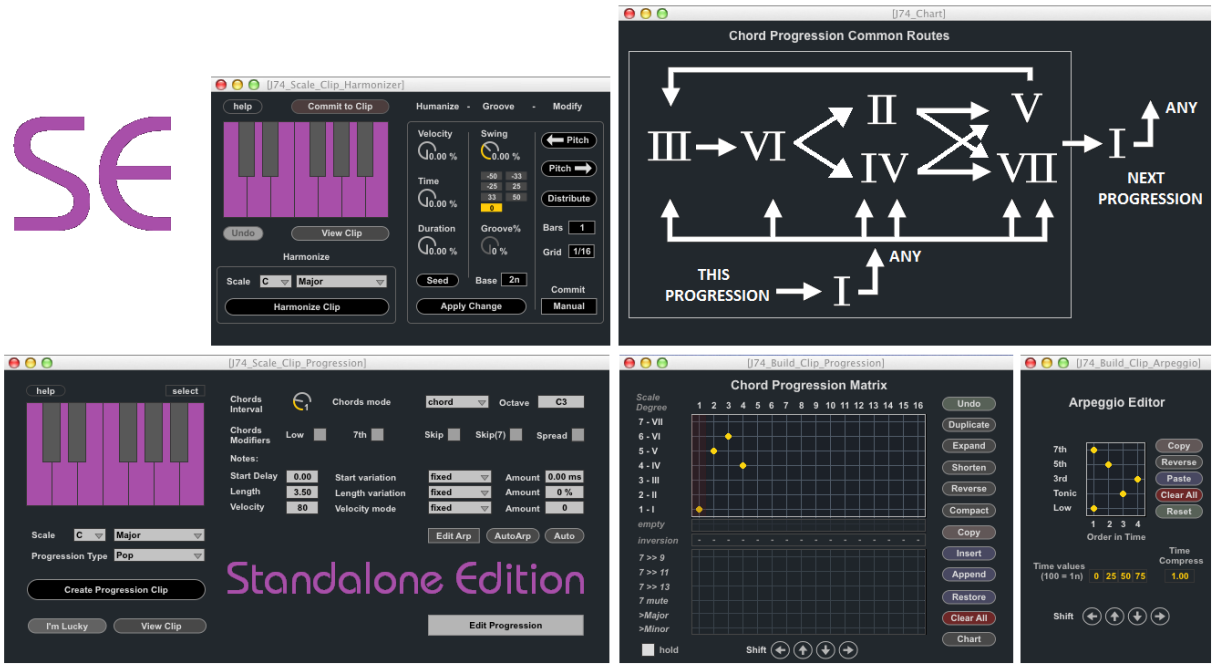
J74 Progressive

- Standalone Edition -



A tool set for Chord Progression and Harmonic Editing

Table of Contents

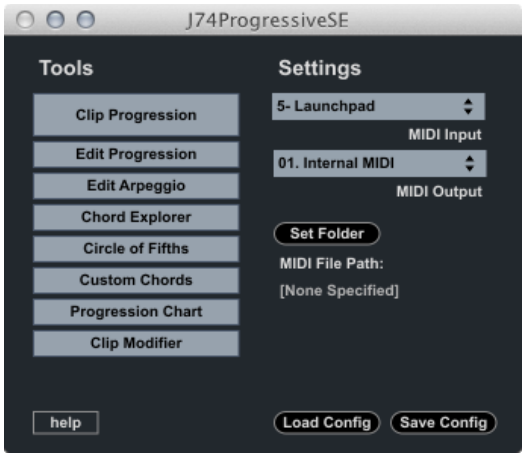
How to install and start up J74 Progressive (Standalone Edition)....3
Using J74 ProgressiveSE with a Digital Audio Workstation (DAW)....4
Background: What is a chord progression anyway? 8
The Chord Progression Editor 10
The Main window of the Chord Progression Editor 11
The Chord Progression Matrix view 13
The Chord Modifiers: the [modifiers] matrix in the Chord Progression Matrix view....17
The Chord Modifiers: example of chord extensions / alteration 18
The Chord Modifiers: forcing a chord to be a Major or a Minor chord (borrowed chords)....19
Voicing by chord extension and alteration....21
Default inversions and the [Octave] range....21
The Inversion Row (custom chord inversions)....22
Specifying custom chord shapes....23
Sequencing and editing operations on progressions....25
The Chord Explorer....26
The Chord Explorer: visualizing Chord Tension....27
The Chord Explorer: forcing a chord root 30
The Circle of Fifth View: visualization and navigation of the diatonic modes....31
The Arpeggio Editor....32
Live Mode....35
Saving and Loading Snapshots....36
The Clip Modifier....37
The Clip Modifier: Harmonize section....38
The Clip Modifier: Humanize section....41
The Clip Modifier: Groove section....42
The Clip Modifier: Modify section....43
Appendix 1 - Chord Explorer MIDI Custom Mappings....44

How to install and start up J74 Progressive (Standalone Edition)

J74 Progressive Standalone Edition (SE) is an application for Mac and Windows. Installation of the tool is extremely simple: just *unzip* the download pack, look for the application in the version for your specific system OS and launch it from the respective folder.

Note: on Windows systems it is required to have Apple *Quick Time* installed (free download from apple.com)

Once started the application will present to you its launch window, named "J74ProgressiveSE". From there you can open the various tools part of the application.



On the left side of the launch window you will find the buttons for starting up the various *Tools*:

- The [**Clip Progression**] button opens the Chord Progression Editor
- The [**Edit Progression**] button opens its Chord Progression Matrix
- The [**Edit Arpeggio**] button opens the Arpeggio Editor view
- The [**Chord Explorer**] button opens the Chord Explorer window
- The [**Circle of Fifths**] button opens the Circle of Fifths view
- The [**Custom Chords**] button opens the Custom Chords Editor
- The [**Progression Chart**] button opens a reference chart
- The [**Clip Modifier**] opens the Clip Modifier window
- The [**Help**] button opens the help page

On the right side of the launch window you will find the the configuration *Settings*:

- The [**MIDI Input**] menu allows you to select a MIDI port (or bus) for the application to receive MIDI from
- The [**MIDI Output**] menu allows you to select a MIDI port (or bus) for the application to send MIDI to
- The [**Select Folder**] button allows you to select a folder on your system as destination for MIDI file creation
- The [**Save Config**] button allows you to save the current setup to a snapshot file
- The [**Load Config**] button allows you to (re)load the setup from a previously saved snapshot file

Let's now have a look on how to set up J74 ProgressiveSE with a Digital Audio Workstation (DAW).

Using J74 ProgressiveSE with a Digital Audio Workstation (DAW)

J74 ProgressiveSE can be easily integrated with any *Digital Audio Workstation* (such as Logic, Sonar, FL Studio and so on) by using standard MIDI. To work with a DAW you will need to import (drag & drop) the created MIDI files and (optionally) send MIDI.

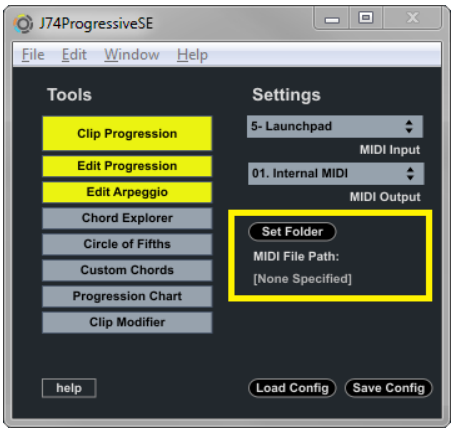
Importing the progressions (as MIDI Files) into your DAW

The first thing to do when using J74 ProgressiveSE is to *configure a destination folder* for the generated progressions, which will be created in the form of *standard MIDI files*. You can do this by using the [**Select Folder**] button on the J74 ProgressiveSE launch window, selecting any folder of your liking (note: if a folder is not selected, the tool will save MIDI files on the folder it is launched from).

After you created a progression (as a standard MIDI file) it will be extremely easy for you to use it in your DAW. All modern DAW's in fact allow you to *import* the MIDI Files as clips on their MIDI tracks. As a matter of fact most DAW's will also allow you to drag & drop MIDI files directly on the portion of the MIDI track of your choice.

Let's have a look to this procedure with an actual DAW, in this case FL Studio. The same concepts will apply to any other DAW, on both Mac and Windows environments. At the end of this section several links (concerning the procedure for importing MIDI files) will be provided for the most popular DAW's.

1) We start by configuring a destination folder for the MIDI Files progressions, with the [Select Folder] button.

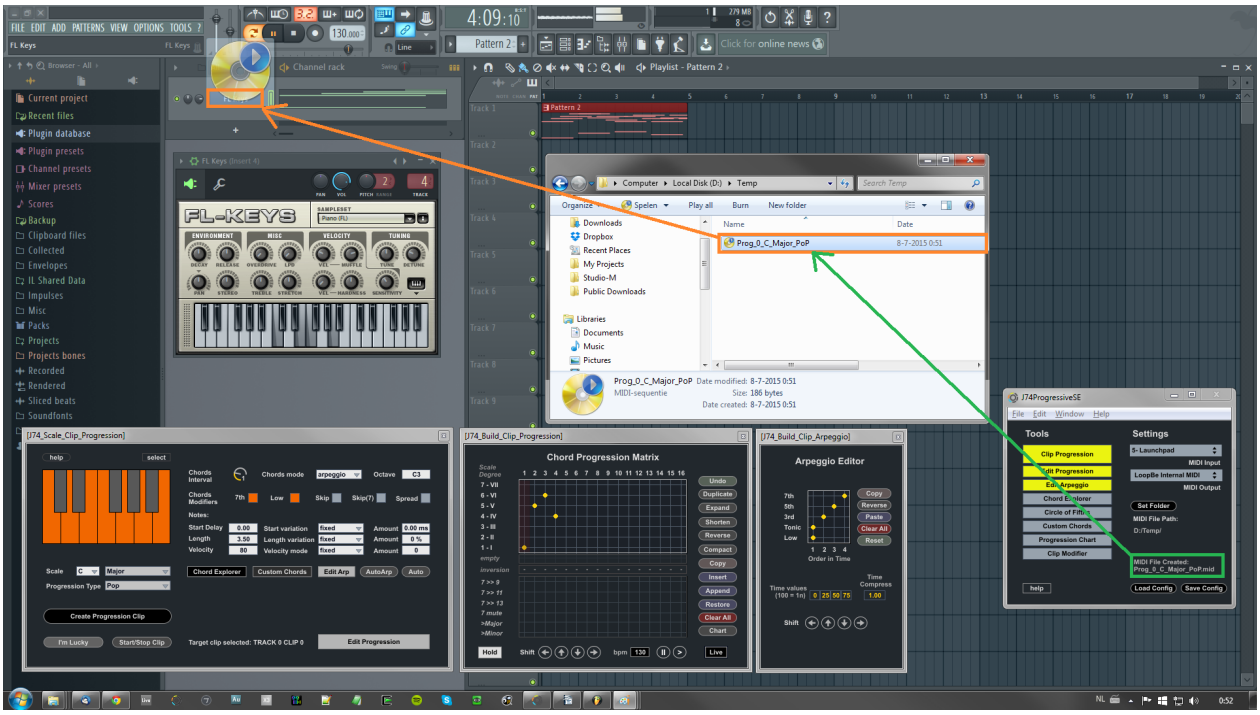


2) We can now work on our progression (details on how to work with it will be provided in the course of this user manual). Once we are satisfied we can generate a MIDI file using the [Create Progression Clip] button in the Chord Progression Editor window. At this stage a new MIDI file will be created in the destination folder (if we would leave the defaults on scale and progression presets, its name would be “Prog_0_C_Major_PoP.mid”).

3) Once created, we can now import the MIDI file in our DAW. In FL Studio this is possible by simply *dragging & dropping* the MIDI file into a pattern. Other DAW's will allow you similar procedures, for instance dragging a MIDI file as a clip into a MIDI track (or instrument track) and even onto a specific time-line location.

Once imported, the MIDI file *becomes a native clip for the DAW* (in the FL Studio case, a piano roll pattern) and we can use it as any other clip made recording on a keyboard or programming by hand (note: the DAW will import the MIDI notes and will not use the actual MIDI file anymore. So after importing them in the DAW, if you wish to, you can delete the MIDI files in the destination folder of J74 ProgressiveSE).

The picture below shows you the MIDI file being dragged & dropped on the FL Studio pattern.



Here a few links which provide information on how to import or drag & drop MIDI files in the most popular DAW's:

Ableton Live
https://www.ableton.com/answers/drag-midi-clips

Apple Gargeband
https://support.apple.com/kb/PH2009?locale=en_US

Apple Logic
http://en.wikiaudio.org/Logic:Import_and_export_MIDI_files

Avid Pro Tools
https://www.youtube.com/watch?v=T5Jk-g-DDVU

Cakewalk Sonar
http://www.cakewalk.com/Documentation?product=SONAR%20X2&language=3&help=Looping.15.html

Cockos Reaper
http://forum.cockos.com/showthread.php?t=115769

Image Line FL Studio
https://www.image-line.com/support/FLHelp/html/automation_midiimport.htm

Presonus Studio One
https://forums.presonus.com/viewtopic.php?f=151&t=5487

Propellerhead Reason
http://www.cybermidi.com/news/index.php/blog/For-Musicians/how-to-guide-importing-midi

Steinberg Cubase
http://www.sweetwater.com/insync/importing-midi-file-existing-cubase-project/

Sending MIDI to a DAW (optional, for use with Live Mode and the Chord Explorer functionality)

The [**MIDI Output**] setting can to be configured if you want to use the *Live Mode and Chord Explorer* functionality (which will be explained in detail later in this manual). If working with a DAW you will need to use an *internal virtual MIDI Bus* (also known as virtual MIDI port) for sending MIDI between the applications (Progressive to DAW).

- On a Mac system you can use the system built-in IAC Driver virtual MIDI bus.
- On Windows you can use for instance LoopBE or MIDI Yoke (both free and easy to find on the Internet).

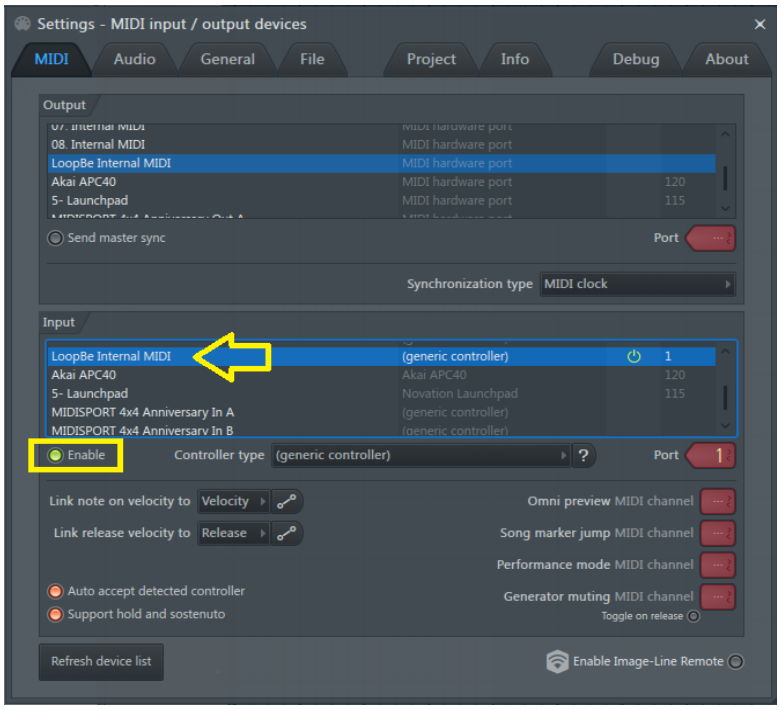
Settings:

- In the DAW preferences *enable the selected virtual MIDI bus as MIDI input port* and *assign it as MIDI input to the track you wish to send MIDI to*.
- Select the virtual MIDI port / bus as *the [MIDI Output] setting of the J74 ProgressiveSE application*.

Here an example of working with a DAW with Live Mode and Chord Explorer. The DAW in this example is again FL Studio, but the same concepts apply to any other DAW.

1) Be sure a virtual MIDI bus is available to your system. In this case we will use the free utility for Windows LoopBE (http://nerds.de/en/loopbe1.html). In the Mac case we would use the built-in in OSX utility IAC Driver.

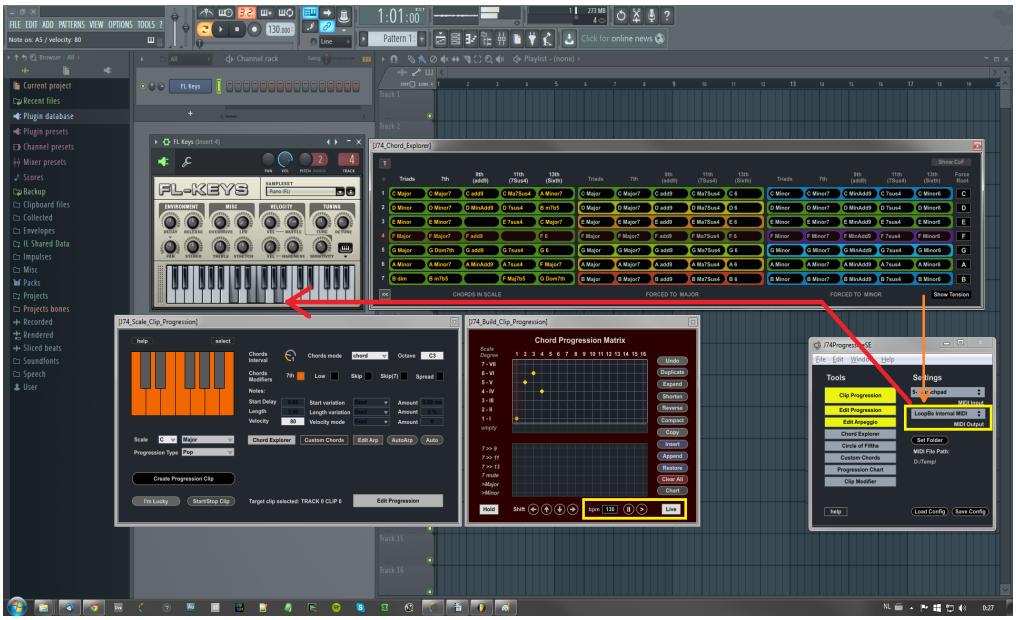
2) We enable now the virtual MIDI bus in the DAW as input MIDI port.



Note: It is recommended to enable the selected virtual MIDI port only as input on the DAW to avoid accidental MIDI loops.

3) In J74 ProgressiveSE we select the virtual MIDI bus as MIDI output in the [MIDI Output] menu.

4) We can work on our DAW as usual. We insert a new instrument in the DAW and activate MIDI input from the selected virtual MIDI bus/port (default wild-cards as “any MIDI input” will also be fine).



If you now go in Progressive Live Mode (set the [Live] toggle ON in the Chord Progression Matrix) MIDI will be sent over to the instrument of the DAW. We can now test our progression or even record it in real time by activating recording on the DAW. Be sure in this case to set the same tempo as the DAW on the [bpm] parameter of the Progression Matrix window. If necessary use the (**II**) or (**>**) buttons of the same window to align the measure start.

As you can see from the piano roll MIDI was recorded as if it was played from a MIDI keyboard.

For what concerns the *Chord Explorer* the use of [MIDI Output] has exactly the same effect (MIDI from Progressive to the DAW). The [**MIDI Input**] setting, instead, can be used for MIDI mapping and this way control, from a physical MIDI controller, the *chord buttons* of the Chord Explorer. Refer to the Chord Explorer section (later in this user manual) for the details on how to use a MIDI Controller with the Chord Explorer.

Background: What is a chord progression anyway?

A Chord progression is in essence a *sequence of musical chords*. In music composition the interplay between the chords in a progression can be used to achieve a sense of movement and change. Some chord combinations will sound uplifting, some somber, others troubled. In western "pop" music a song typically builds on sections, such as verse and chorus, which are no other than chord progressions. In this context a chord progression works by building up the *landscape* for a melody.

But chord progressions are not just *random* sequences of chords, in the same way as melody is not (in general) a random sequence of notes. To *work musically* a chord progression needs to *evolve on and around a scale*, establishing (or contradicting) something related to it.

But, are there methods for defining what works well and what not? Yes, there are.

The Diatonic Method

One fundamental method to build scales (e.g. modes) and chords, as used in western music, is the *diatonic method*. Among other things, the method defines the rules for building, given a scale, a set of chords with very strong harmonic relationship to their originating scale and with each other.

Without going into the details of theory, just think of the diatonic method *as the set of rules for chord making*: you have a scale, you apply the method and you get *seven chords working nicely together*.

Consider for example the C Major scale. Applying the diatonic method would give the following chord set:

- Chord Degree 1 (I): C major, C-E-G (= triad from the first note in the scale, C).
- Chord Degree 2 (II): D minor, D-F-A (= triad from the second note in the scale, D).
- Chord Degree 3 (III): E minor, E-G-B (= triad from the third note in the scale, E).
- Chord Degree 4 (IV): F major, F-A-C (= triad from the fourth note in the scale, F).
- Chord Degree 5 (V): G major, G-B-D (= triad from the fifth note in the scale, G).
- Chord Degree 6 (VI): A minor, A-C-E (= triad from the sixth note in the scale, A).
- Chord Degree 7 (VII): B diminished, B-D-F (= triad from the seventh note in the scale, B).

Note: please observe the fact that chords are given here a degree name. *The degree is defined by the order (in the originating scale) of the note they are built from*. The degree based naming is one of the very few things you need to remember for quickly finding your way through J74 Progressive!

If we instead pickup a Gb Minor scale, the diatonic method would result in a completely different chord set:

- Chord Degree 1 (I): Gb minor, Gb-A-Db (= triad from the first note in the scale, Gb).
- Chord Degree 2 (II): Ab diminished, Ab-B-D (= triad from the second note in the scale, Ab).
- Chord Degree 3 (III): A major, A-Db-E (= triad from the third note in the scale, A).
- Chord Degree 4 (IV): B minor, B-D-Gb (= triad from the fourth note in the scale, B).
- Chord Degree 5 (V): Db minor, Db-E-Ab (= triad from the fifth note in the scale, Db).
- Chord Degree 6 (VI): D major, D-Gb-A (= triad from the sixth note in the scale, D).
- Chord Degree 7 (VII): E major, E-Ab-B (= triad from the seventh note in the scale, E).

If you do not practice it a lot, this may be quite a difficult thing to remember or find out when you need to...
But do not worry: fortunately, you won't have to remember all this. *Progressive will do it for you.*

On top of the foundations given by the diatonic method, many other useful techniques are known in the context of harmony making. Many of those techniques are built in in J74 Progressive and are ready to use to add emphasis and twist to your creations.

Chord extensions: sevenths, added tone and suspended chords
While many popular chord progressions are based just on simple triads, some more sophistication can be added by using *extensions and alterations*, with chords of more than three (typically four) notes. The techniques to extend or alter a chord may be a bit difficult to remember and master as well. Also in this case Progressive can come to aid: modifying a triad into a seventh, an added or a suspended chord is just one click away.

Borrowed Chords and Accidentals
Further level of sophistication can be achieved by adding a harmonic twist to the progression, somehow contradicting the originally selected scale and creating an element of surprise to the chord sequence (a chord you wouldn't expect, not part of the scale, but which works right at the right spot). A technique which often results effective for this purpose is the use of *borrowed chords*. A borrowed chord is a chord which is, indeed, borrowed from another scale or mode. For instance a chord which in the originally selected scale would be a minor can be effectively be substituted by a major in the same tonic and add a strong element of contrast. Also this is possible in Progressive.

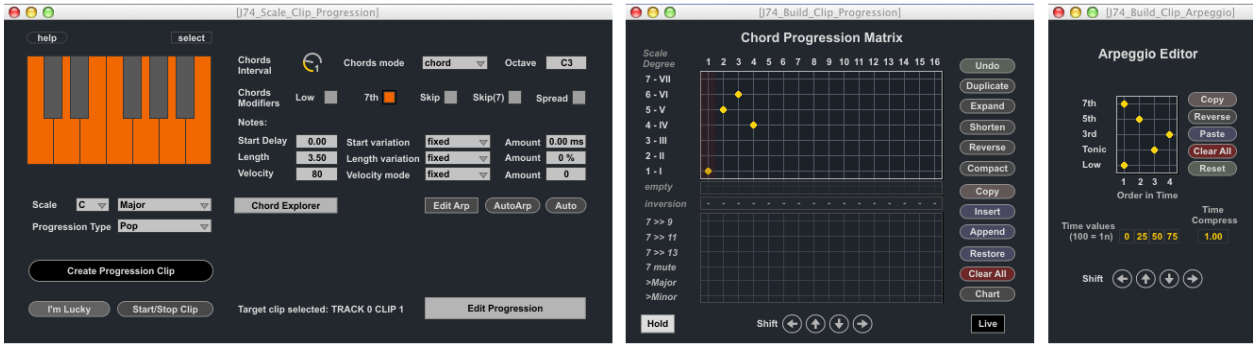
Inversions, arpeggio's, groove, swing, real-time testing and more
Progressive also allows you to manipulate you chord sequence by choosing the inversion type, creating an arpeggio based on the chords, modify timing and more. And it helps you while creating, by giving you the possibility of testing changes before applying them into the final progression.

No more digressions!
So Progressive can help you applying these techniques effectively to create and modify chord progressions, even starting with *useful preset progressions*. But presets are not necessary the point to end the journey: from the initial selections onwards, it's all creativity and experimentation, based on a user interface as simple as the one of a sequencer, while still holding on the foundations given by some of the most effective techniques in music composition.

Now that you have a background of what Progressive is all about, let's have a look to the Chord Progression Editor interface and its functionality.

The Chord Progression Editor

The Chord Progression Editor is the tool for building chord progressions. The tool uses internal modeling of harmony and composition techniques and can generate extremely realistic results very quickly, results provided in the form of standard MIDI files, ready for use in your DAW projects.



The work-flow of the Chord Progression Editor is very simple: you select a scale and work on your sequence of chords. You can start from different points: a preset progression for instance. Or you can program an original progression straight into the editor. In alternative you can come up with ideas by trying things out and even improvising, using the Chord Explorer or the Live Mode (more on these later).

Once you defined a useful progression, you can then go all the depth into editing and tweaking of many details, adapting the way chords are performed (inversions and extensions), choosing the playing style (straight chords, arpeggios, or hybrids forms, such as cadenced or syncopated arpeggios) or adding variation to dynamics (timing and velocity) and notes (skip, spread).

Once you produced your results as new MIDI files, you can use them directly in your DAW project.

Important: the results of the creation and editing operations done in Progressive will be provided in the form of *MIDI Files.* Be sure to set a *destination folder* prior to start operations, using the [**Select Folder**] setting on the J74 ProgressiveSE application.

The user interface and the controls of the Chord Progression Editor

The user interface of the Chord Progression Editor is divided in various sections: the first section is the Main View window which is used to set all the fundamental, common parameters. The second section, the Chord Progression Matrix, is used for the in-depth sequencing and editing of the progression. The Third window, the Arpeggio Editor, zooms into the details of the arpeggio technique in use. Additional windows are dedicated to the Chord Explorer, Circle of Fifths and Custom Chords settings.

The Main window of the Chord Progression Editor

In this window you find the most important controls: the [**Scale**] settings, the [**Progression Type**] presets and the control buttons, such as the [**Create Progression Clip**] for producing the final MIDI file result and the [**I'm Lucky**] for random progression experimentation (which by the way can be a lot of fun...).

The following explains each parameter.

Main controls:

- [**Scale Menu**]: select Root and Scale to be used for creating the chord progression. Note: it is also possible to *edit the scale* and create a ***custom scale*** (with any number of notes between 2 and 7). For this use the little one-octave keyboard of the Main window (change, add, remove notes with C as reference root).
- [**Progression Type**]: select a progression example to start with, if you like
- [**Create Progression Clip**]: create a new MIDI File with the currently edited Chord Progression.
- [**I'm Lucky**]: generates a random chord progression
- [**View Clip**]: opens the [MIDI Clip View], showing the last created MIDI File

Tip: Essentially the [Create Progression Clip] button is your final goal, as it produces the MIDI file result.

Tip: Although not exactly the approach a composer would agree on, the [I'm Lucky] button can be an unexpected source of inspiration. Try this out as it may produce stuff you won't get by linear approach.

Chord timing, range and mode:

- [**Chords Interval**]: defines the interval for chords changes (in measures / bars)
- [**Chords Mode**]: define if chords are played at once or as an arpeggio

Tip: the [Chord Interval] is an important parameter. It influences many of the possible arpeggio styles. Try this in combination with the Arpeggio Editor [Time Compress] and [Time Values] settings (see next).

- [**Low**]: adds the chord tonic, two octaves down
- [**7th**]: adds an additional note on the 7th interval (the [**modifiers**] matrix can modify this per chord)
- [**Octave**]: defines the range for the notes used in the progression and also how chords will be inverted by default. The range is defined starting from the note selected in [Octave] and extends up for twelve semitones.

The [7th] option, if set ON, allows you to use the [**modifiers**] matrix in the Chord Progression Matrix to change the *type of chord on a per chord basis*. The 7th is the default chord type (if [7th] is ON), but several alternatives become available: a chord can be turned into a 9th (Add9), 11th (7Sus4) , 13th (Sixth) or reduced to a triad; a chord can also be forced to be a Major, Minor or any other custom shape independently from the diatonic rules (for accidentals or "borrowed chords").

Besides the [modifiers] matrix other chord note variations are possible using the following options:

- [**Skip**]: randomly skips notes in the chord main triad
- [**Skip(7)**]: randomly skips the added 7th (if present) or the added notes by the [modifier] matrix
- [**Spread**]: randomly moves some notes one octave up or down from the settings of [Octave].

Tip: [Spread] can add even a melodic component to the part. To get an idea just *duplicate the same sequence of chords or even just the same chord a few times* (in the Chord Progression Matrix you can do this by using the [Duplicate] action) *and enable* [Spread]. The chords, even if repeated, will be plot each time differently with the high notes producing little melodic evolutions.

Note timing and dynamics can be modified using:

- [**Start Delay**]: affects the start time of each note. A value of 0.00 ms assures perfect starting.
- [**Start Variation**]: can be set to fixed (Start Delay applied to each note) or variable (random fluctuations)
- [**Start Delay Variation Amount**]: (in ms) defines the fluctuation range in variable mode.
- [**Length**]: affects the duration of each note (in beats/4ths).
- [**Length Variation**]: can be set to fixed (the duration is fixed for each note) or variable (random fluctuations around the Length value).
- [**Length Variation Amount**]: (in ms) defines the fluctuation range in variable mode.
- [**Velocity**]: affects the note velocity (0-127).
- [**Velocity mode**]: can be set to fixed (the velocity is the same for each note) or variable (random fluctuations around the Velocity value).
- [**Velocity Variation Amount**]: defines the fluctuation range in variable mode.

Tip: activating velocity, length and timing *variations* (eventually in combination with [Spread] and [Skip] options) you can achieve very realistic performance styles. Look for instance to the settings produced by the [**Auto**] and [**AutoArp**] presets. These preset (auto)configure exactly those parameters.

Auto settings (presets):

- [**AutoArp**]: a preset for arpeggio common settings
- [**Auto**]: a preset for humanized common settings

Additional buttons (placed on top of the little keyboard):

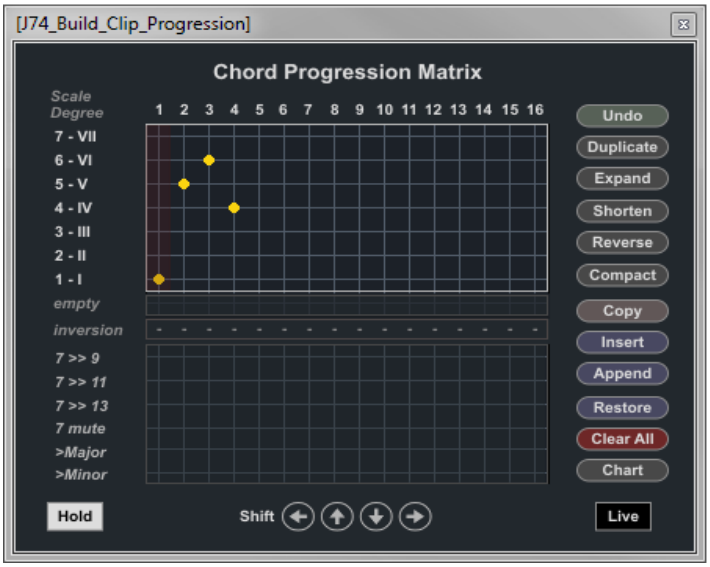
- [**help**]: opens the help summary document for the device.
- [**color**]: changes the color scheme used for the one octave keyboards (e.g. scale keyboard).

Additional window launch:

- [**Chord Explorer**]: opens the Chord Explorer window
- [**Custom Chords**]: opens the Custom Chord configuration window
- [**Edit Arp**]: opens the Arpeggio Editor window
- [**Edit Progression**]: opens the Chord Progression Matrix window

The latter will take us to the in-depth tweaking, which will be the next thing we will look into.

The Chord Progression Matrix view



The Chord Progression Matrix is the place where you program your own chord progression, as indeed a sequence of chords in order of time. As you can see in the picture, where a yellow dot is placed a chord is inserted.

- On the horizontal axis you define *when* the chord is placed in time (time between 1 and 16, the time unit defined by the [Chord Interval] in the Main window).
- On the vertical axis you define *which* chord degree will be inserted (degrees 1 to 7 refer to the naming introduced in the previous background explanation)
- A special value for a chord is the *empty chord or rest interval*. An empty chord can be inserted by adding a dot *on the grayed-out row set below the row for chord degree* {1 - I}) and named [**empty**].

Tip: By combining actual chords (degree 1 to 7) with empty chords (rest intervals) you can manipulate the (otherwise fixed) chord interval, adding emphasis to the progression pace (see examples further on).

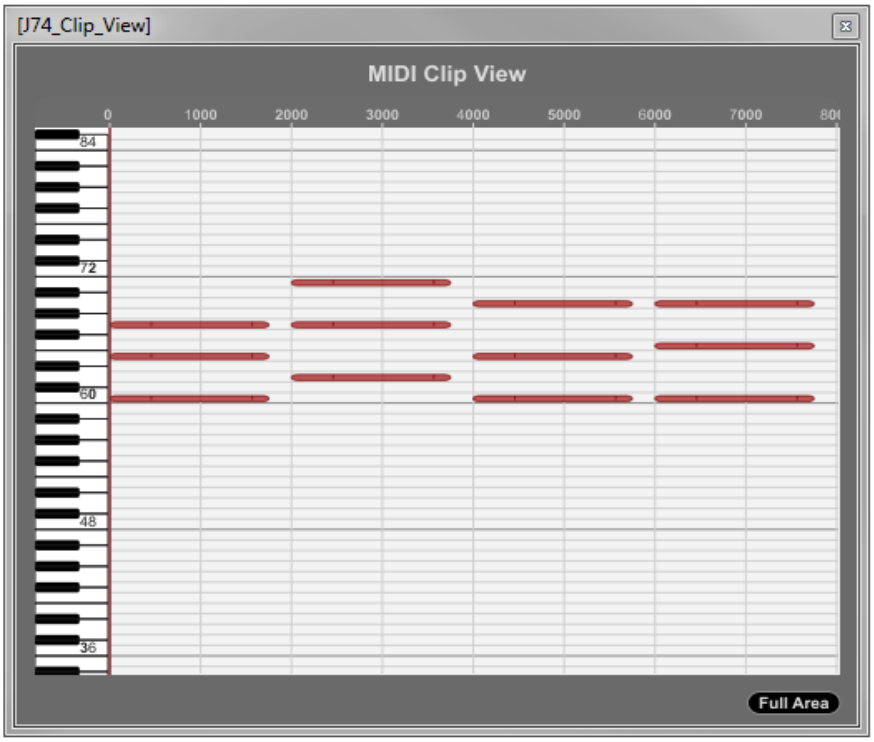
Tip: You can also try combinations of chords *before* producing any clip/file. Two approaches are possible for this:

- Using the *Chord Explorer window*, where all the chords Progressive can use for the selected scale are arranged per degree and modifier type, you can manually check how chords will sound together.
- Using *Live Mode* ([**Live**] = ON, in the Chord Progression Matrix), you can use the Chord Progression Matrix *in real time*. Progressive will send out chords on the fly (without a MIDI clip/file). A few limitations to the available features apply in this case (see Live Mode section, later on in this document).

Besides the matrix for the chord sequence, on the bottom section of this window, you can find a second matrix: the [**modifier**] matrix. This section allows *per-chord alteration/extension* (modifying the behavior of the [**7th**] option) and *chords forcing into majors, minors or custom chords* (outside the rules of diatonic method). Using this you can add additional complexity to the chord progression, on a chord by chord basis. More on this in a few paragraphs.

The MIDI Clip View

Using the [View Clip] button (on both Chord Progression Editor and Clip Modifier windows) you can open the *MIDI Clip View*. This window can be useful while editing as it immediately shows the result of the operation you made. This window is particularly important when working with the Clip Modifier, as explained later in this manual.



Note: no editing is possible on the MIDI Clip View (that is: you cannot change note events here). The only controls available are the [**Area Selection**] and [**Full Area**] settings, which only apply to the Clip Modifier (they define the area of the clip for the Clip Modifier to work on – more on this in the Clip Modifier section).

Examples

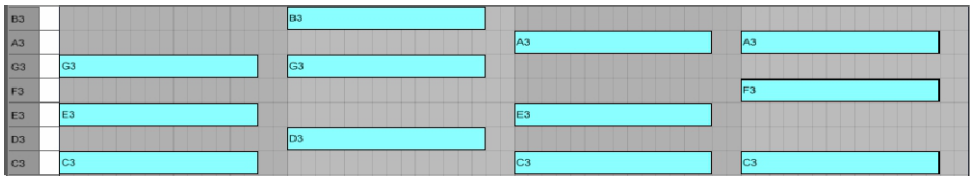
We will make now a few examples about how to use the Chord Progression Editor. We will start with an extremely simple example and proceed by adding complexity and sophistication. Along the way we will introduce new concepts, such as rest intervals, chord extensions, chord inversion and borrowed chords (chord forcing for modal interchange).

1) Let's pick up a very simple example to begin with, as in the picture above, progression 1-5-6-4.

The matrix configuration results in the following:
Time 1: play chord degree 1
Time 2: play chord degree 5
Time 3: play chord degree 6
Time 4: play chord degree 4

As you can see what you select here are chord degrees and not chords names (like C) or notes (C-E-B). The actual chords (and notes) depend on the scale settings, chord interval and mode as configured in the Main window and will be generated by the internal modeling of the diatonic method as done by the tool.

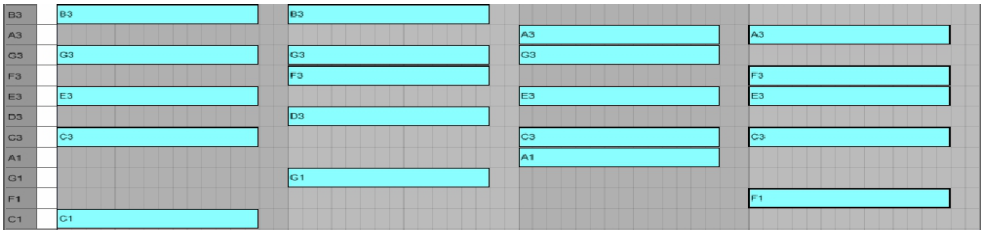
If we select C Major as scale, leaving all other parameters to default, this results in the following MIDI file:



Time 1: play chord degree 1 in the C Major scale which is C major chord = C-E-G
Time 2: play chord degree 5 in the C Major scale which is G major chord = G-B-D
Time 3: play chord degree 6 in the C Major scale which is A minor chord = A-C-E
Time 4: play chord degree 4 in the C Major scale which is F major chord = F-A-C

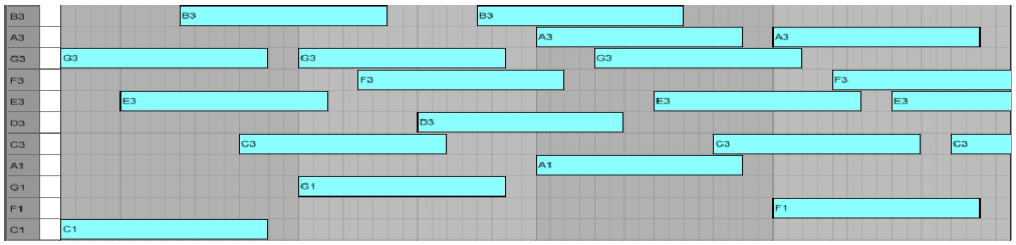
Tip: a similar view to the one above is available on the MIDI Clip View window which can be opened using the [View Clip] button on the Chord Progression Editor.

So far so good. Now let's change the settings and add 7th and Low options. This would give the following:



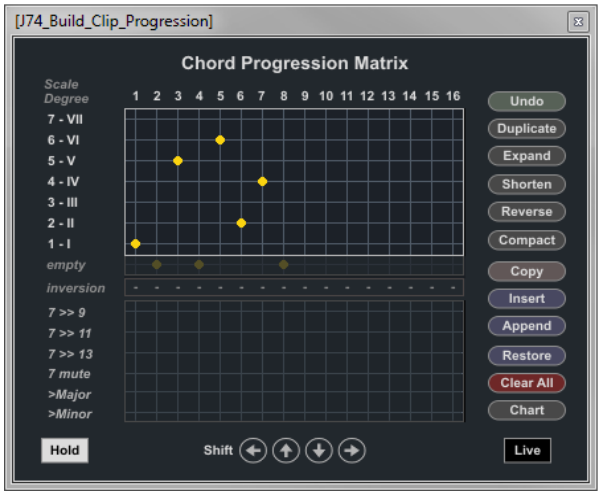
Time 1: play chord degree 1 in C Major with 7th and low tonic, a C major 7th chord = C-E-G-B (plus a low C)
Time 2: play chord degree 5 in C Major with 7th and low tonic, G dominant 7th chord = G-B-D-F (plus a low G)
Time 3: play chord degree 6 in C Major with 7th and low tonic, an A minor 7th chord = A-C-E-G (plus a low A)
Time 4: play chord degree 4 in C Major with 7th and low tonic, a F major 7th chord = F-A-C-E (plus a low F)

Let's now change the mode to arpeggio "arp-down" (Main window). The result of the file generated will be:

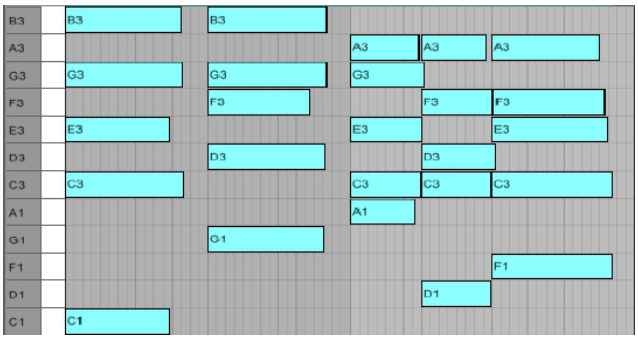


Where the same notes above are performed in an arpeggio, with the "down" direction.

2) Let's now have a look to a slightly more complex example, using *empty chords* as rest intervals between chords.

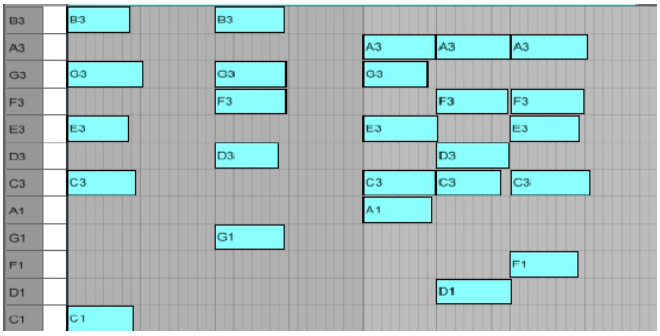


The example shows a sequence 1-*rest*-5-*rest*-6-2-4-*rest*. This progression will extend across eight bars (being the [Chord Interval] set to 1, indeed 1 bar) and produce the following MIDI file (relevant settings in the Main Window include Low and 7th both turned ON):



As you can see the first chord (degree 1), second (degree 5) and last (degree 4) have a longer interval due to the presence of an empty chord (rest) behind them. Please also observe the fact that by default the chord duration will extend "*over*" (any) *following empty chord*. This behavior is defined by the [**hold empty**] switch in the Chord Progression Matrix (a toggle switch in the left/bottom corner), which is ON by default.

If we change the [hold empty] setting to OFF, the result would become the following:

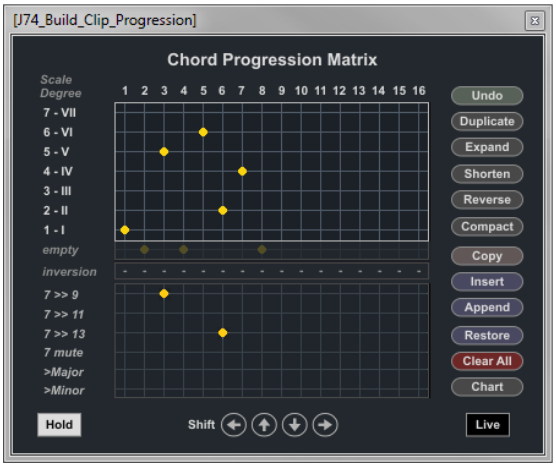


As you can see in this case ([hold empty] = OFF) actual chords do *not extend over empty chords*.

The Chord Modifiers: the [modifiers] matrix in the Chord Progression Matrix view

As you have seen the [7th] option on the Main window allows you to add to the chords an additional note at the seventh interval in the scale. By default, when the [7th] option in set ON all the chords in the progression will become seventh chords (or just 7th).

This behavior *can be modified on a per chord basis using the [modifier] matrix*. In this way you can fine tune the progression by altering/extending each chord and/or forcing its shape independently from the standard diatonic method rules.



The [**modifier**] matrix is the matrix *on the bottom section of the window* and is *active only if the [7th] option is set to ON*. In this matrix you can see six rows. You place dots in a given column to modify the type for the chord inserted at the corresponding time slot of the Chord Progression Matrix.

The first four rows affect the chord "extension" and "alteration": inserting a modifier on one of these first four rows will alter/extend the harmonic flavor of that chord (or reduced it to a triad).

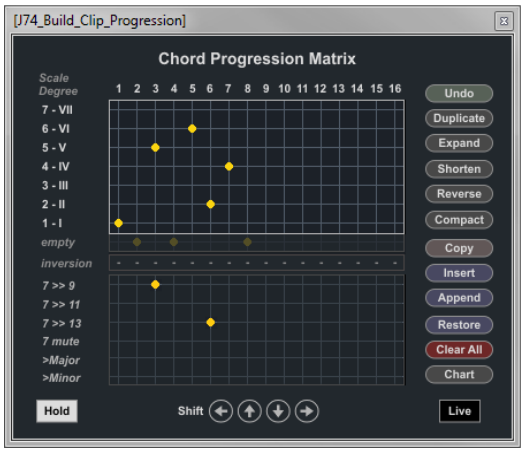
The fifth and sixth rows, instead, are used to "force the shape" of a chord: inserting a modifier on one of these rows will *force* the chord type to become either a Major (Custom1) or a Minor (Custom2) chord *independently* from the rules of the diatonic method. This allows you to add accidentals and/or borrowed chords into your progression.

In detail, the following happens for each dot you place (or leave empty):

- If you leave a column empty (= *no dot*), no change is made to the default [7th] behavior on that chord. The chord will be *played as a 7th and with a shape derived from the diatonic method rules.*
- If you set a dot on the [**7 >> 9**] row, the chord will be played as a 9th chord (actually an Add9 chord, due to the four note system adopted by Progressive – see next for an explanation on how this is done).
- If you set a dot on the [**7 >> 11**] row, the chord will be played as a 11th chord (actually a 7 Sus4 chord, due to the mentioned four note / inversion system).
- If you set a dot on the [**7 >> 13**] row, the chord will be played as a 13th chord (actually an Sixth chord, due to the mentioned four note / inversion system).
- If you set a dot on the [**7 mute**] row, the chord will be played as a simple triad of three notes (same as if the [7th] option was disabled for that chord).
- If you set a dot on the [**>Major**] (or [**>Custom1**]) row, the chord will be forced to become a Major chord (or a custom chord, if configured), independently from the diatonic method rules.
- If you set a dot on the [**>Minor**] (or [**>Custom2**]) row, the chord will be forced to become a Minor chord (or a custom chord, if configured), independently from the diatonic method rules.

The Chord Modifiers: example of chord extensions / alteration

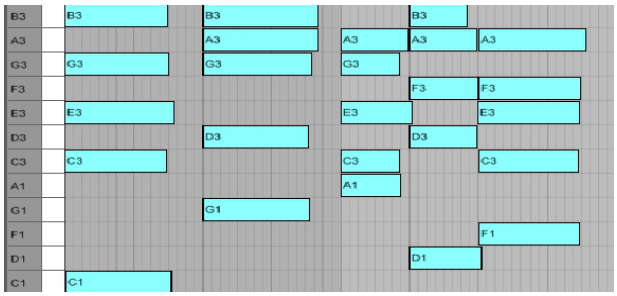
Let's pick up again the example of the previous paragraphs about the [modifier] matrix.



In the specific you can see that:

- At Time 3 *a dot is added on the [7 >> 9] row*. The chord will be modified to be a 9th (Add9) chord.
- At Time 6 *a dot is added on the [7 >> 13] row*. The chord will be modified to be a 13th (Sixth) chord.

Here the result of the MIDI file built by using the setup in the previous picture:



- Time 1: play chord degree 1 in C Major as a 7th chord: a C major 7th chord = C-E-G-B (plus a low C). There is in fact no dot applied to the corresponding column of the [modifier] matrix.
- Time 2: rest (the previous chord in hold down)
- Time 3: play chord degree 5 in C Major, but as a 9th (actually an Add9) chord: G Add 2 = G-A-B-D (plus a low G). On the third time slot (column) indeed there is *a dot on the [7 >> 9] row*. The chord is therefore modified to be a 9th chord (Add9, due to the inversion and note omission system of Progressive).
- Time 4: rest (the previous chord in hold down)
- Time 5: play chord degree 6 in C Major as a 7th chord: an A minor 7th chord = A-C-E-G (plus a low A). No dot applied to the corresponding column of the [modifier] matrix.
- Time 6: play chord degree 2 in C Major as a 13th chord: an D minor 13th (actually a Sixth) chord = D-F-A-B (plus a low D). On this time slot (column) there is *a dot on the [7 >> 13] row*. The chord is therefore modified to be a 13th chord (Sixth, due to the inversion and note omission system of Progressive).
- Time 7: play chord degree 4 in C Major as a 7th chord: a F major 7th chord = F-A-C-E (plus a low F). No dot applied to the corresponding column of the [modifier] matrix.
- Time 8: rest (the previous chord in hold down)

Tip: use the Chord Explorer to have a preview of what the extension/alteration sounds like, before applying it.

The Chord Modifiers: forcing a chord to be a Major or a Minor chord (borrowed chords)

In regards to the diatonic method, the progressions you can generate with the just reviewed tools could be defined as “absolutely pure”. They fit to perfection into the selected scale. While this perfection is still the basic foundation for traditional harmony (as a very good source material for further experimentation) it may not reach the level of emphasis or pathos you are up to.

In fact several techniques are possible in harmony for adding “imperfections” (and therefore interest) to the mix. A common example is the idea of “borrowed chords”. A borrowed chord (or modal interchange) is a chord borrowed from another key with the same tonic. It provides variety through contrasting scales (e.g. major vs minors). With Progressive it is possible to add this kind of twist to your progression.

Possible approaches are:

1. *You can force a chord to become a major, a minor or a custom chord regardless of the rules of the diatonic method*. This is possible using the [modifiers] matrix, as described in this paragraph, and eventually by combining the [modifiers] matrix with the [Custom Chord] configuration view, which is explained later.
2. *You can select a portion of the progression (for instance a chord) and “harmonize it” (selectively transpose it) into another scale or mode.* This approach is described later in this document when introducing the Clip Modifier. This is a more refined approach to scale and modal interchange.
3. You can edit the resulting MIDI file by hand editing in a DAW MIDI editor. The fact of producing standard MIDI files is in this case very handy.

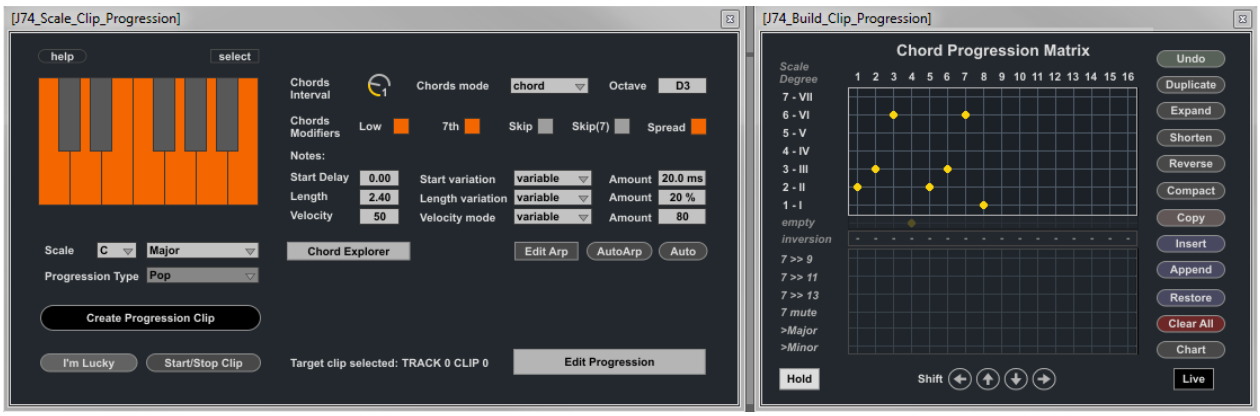
While leaving the last method out of scope to this document (and inviting you for the second to look further in the document - see chapter about the Clip Modifier), we will now focus on the possibilities given by the [modifiers] matrix Major/Minor chord “force”.

<u>How to use the [modifiers] matrix for chord forcing</u>

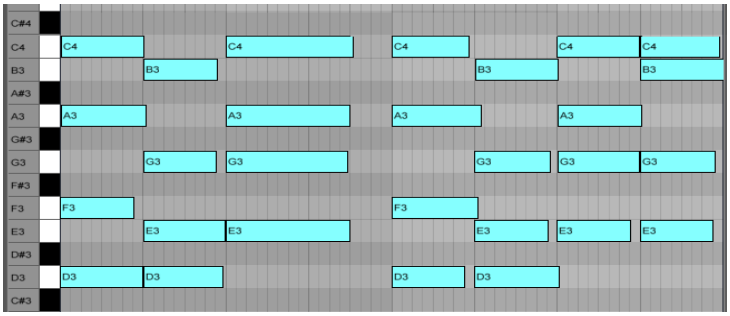
As mentioned the fifth and sixth row of the [modifiers] matrix in the Chord Progression Matrix allow you to force the shape of a chord into the Major (dot on the fifth row) or Minor shape (dot on the sixth row).

<u>Note</u>: By default the Major and Minor shapes , associated to the fifth and sixth rows, use a Major7 and Minor7 extension shape. This can be customized using the [Custom Chord] configuration view, as described later.

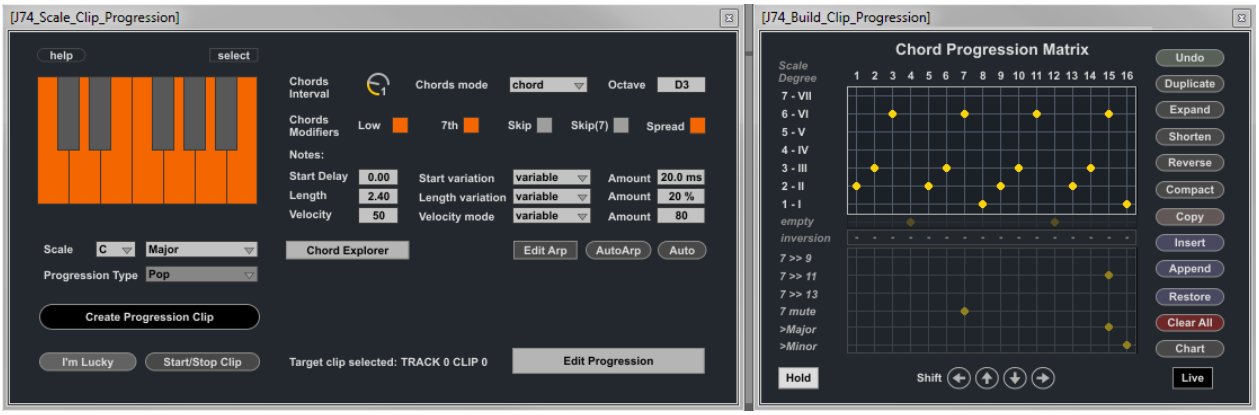
Let's start with a progression with no such modifier in place (no dot on the fifth or sixth row is present):



The progression (2-3-6-rest-2-3-6-1) results in the following MIDI file:



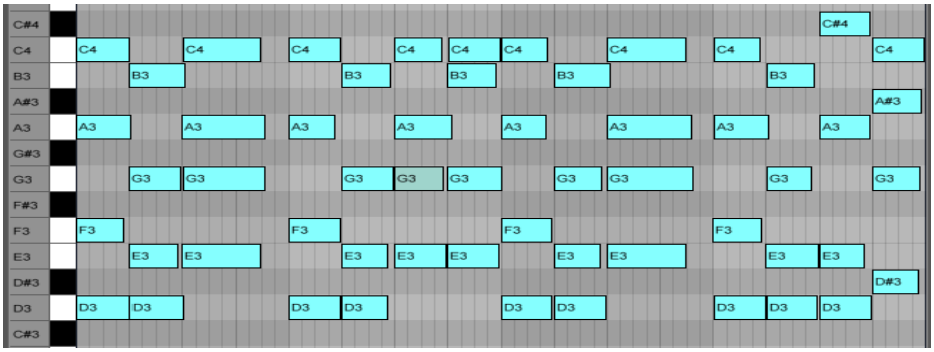
Let's now duplicate the progression and make a few changes to the last two chords:



- On Time 15 we force the chord to be a Major. We also change it to have an 11th extension.
- On Time 16 we force the chord to be a Minor.

These changes results in notes “outside” the original scale (a C Major) and quite a noticeable harmonic emphasis.

Here the resulting MIDI file:



Needless to say, the [modifier] matrix (eventually combined with configuration of [Custom Chords] as explained later in this manual) offers lots of fine tuning possibility for variations.

Tip: The main commands on the Chord Progression Matrix window, such as duplicate, undo, copy etc. also apply to this matrix. The only exception is the Shift Up and Shift Down which are not enabled (it does not make sense to rotate among chord types).

Tip: both chord [modifier] extensions and chord forcing are available in Live Mode for quick sketching. See further in this document about Live Mode.

Voicing by chord extension and alteration
In Progressive chords of *maximum five notes* are supported (four for the actual chord, plus an additional note for the low tonic, if added by the [Low] option). In theory this maximum amount of notes limits extension, which requires in some cases more notes than the maximum available. Anyway, by applying *voicing* and *note omission,* the [modifier] section of Progressive still gives a useful form of chord extension and alteration.

In particular:

- For a **7th** the full "7th" (four notes) extension is provided: 1 - 3 - 5 – 7
- For a **9th**, instead of the theoretic 1 - 3 - 5 – 7 – 9 you get 1 - 3 - 2 – 5. This is the result of two adaptations: the replacement of the 9 with the 2 (harmonically somehow equivalent, as 2 and 9 both refer to the same note in the scale, only 9 being one octave up from the 2) and by omitting the 7 (as only four notes, apart from the low tonic, are possible). This results in a chord form (alteration) known as **Add9**.
- For a **11th** you have 1 - 4 - 5 – 7, with a somehow similar approach: the omission of the 3 (dissonant with the 4 and therefore practically always omitted) and of the 2, resulting in the **7 Sus4** chord form.
- For a **13th** you have 1 - 3 - 5 – 6, with 4, 2 and 7 being omitted and resulting in the so called **Sixth** chord.

Other constraints of the [modifiers] matrix:

- *The first four rows are mutually exclusive*. A chord can be either a 7^{th}, 9^{th}, 11^{th}, 13^{th} (and their actual alterations explained above) or a triad, *but not more than one at the same time*. You can therefore place only one dot (or none) across the first four rows for each column. The last dot placed overrules the others.
- *The last two rows are also mutually exclusive in respect of each other.* A chord may have only one shape: the one automatically derived by the diatonic method (= no dot on fifth and sixth row), the forced-Major one (dot on the fifth row) or the forced-Minor one (dot on the sixth row). Consequently you can place (for each column / time slot) only one dot (or none) across the last two rows (again the last placed wins).
- It is possible though to make *combinations* between settings of the first four rows *and* settings of the last two rows: a chord may be forced to be a Minor (dot on the sixth row) *and* extended as a 9^{th} chord (dot on the first row). Any combination is allowed, as long as it fits the rules just described (side note: you actually do not have to worry about this. The [modifiers] matrix will only allow valid combinations).

Default inversions and the [Octave] range
As mentioned the [Octave] parameter defines the range for the basic notes used in the progression and defines how chords will be inverted by default. The range is defined starting from the note selected in [Octave] and extends up for twelve semitones.

A couple of examples:

- An [Octave] parameter set to C3 means the range used for the chord notes (apart from the Low tonic) will be C3 to B3. Chords will be automatically inverted within this range. So a D Minor chord (D – F – A – C) will be plot as C3 - D3 – F3 – A3, with the last C inverted (in the down direction).
- An [Octave] parameter set to F3 means the range used for the chord notes (apart from the Low tonic) will be F3 to G#4. Chords will be automatically inverted within this range. So a D Minor chord (D – F – A – C) will be plot as F3 – A3 - C4 – D4, first inversion in up direction.

Tip: the default inversion chosen by Progressive can be changed, if you like. To do this you use the [Inversion row] on the Chord Progression Matrix and specify *per chord* which inversion to use. See next for the [Inversion row].

Tip: if the [*Spread*] option is set to ON, the chords will extend across three octaves (+/- 1 octave from the selected value in [Octave]). This can introduce new voicing forms of the chords for potentially interesting new results.

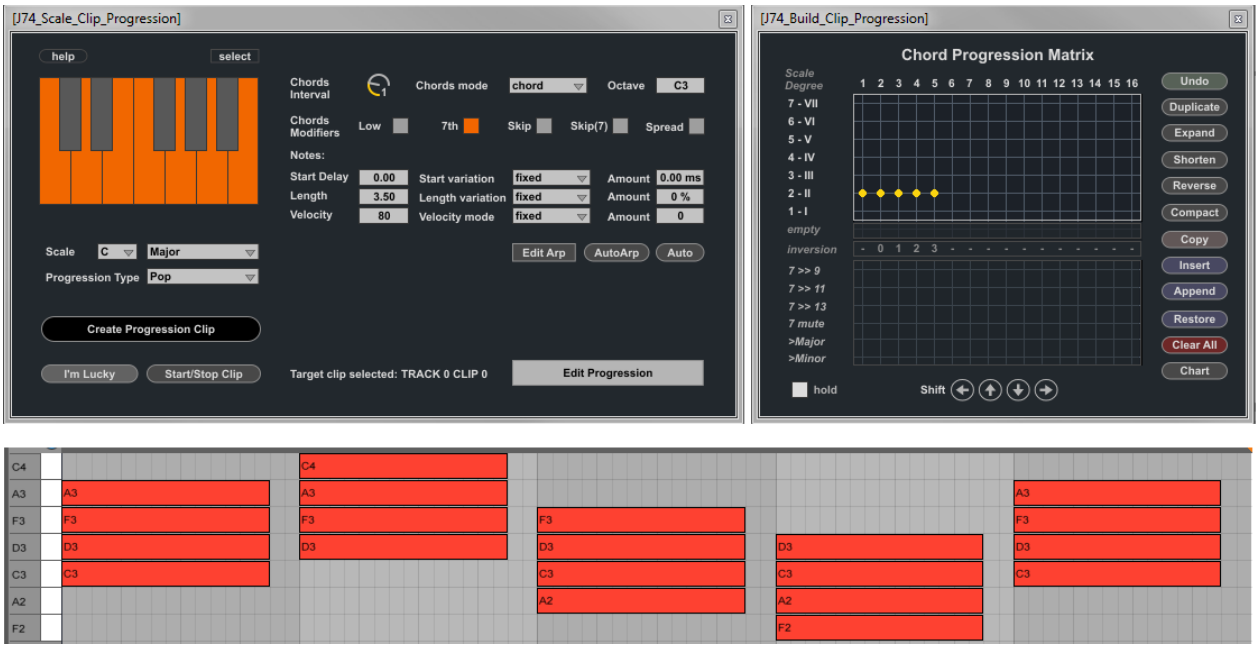
The Inversion Row (custom chord inversions)

As you may already know, the same chord can be played in different ways. You can start from the tonic and go up (the classic root shape) or rotate the chord, starting from another note in the chord. While the chord remains the same, it gets a slightly different taste. This is called chord inversion. Sometimes it may be useful to be able to change the inversions. That's why in Progressive you can, if you like, specify which inversion to use *for each chord*.

Note: as mentioned, Progressive inverts chords *automatically and by default*. The default inversions are chosen in such a way that the equivalent performance remains contained within the pitch range defined by the [Octave] parameter (twelve semitones). This is just one of the ways performers can play chords: this is actually the form that requires the *least movement* of your fingers across the keyboard (notes are close to each other).

In Progressive you can change this behavior using the [**Inversion row**].

Here an example and a description on how to use it.



As you can see the [**Inversion row**] is placed in the middle of the Chord Progression Matrix and shows, for each chord, what Progressive will do in terms of inversion:

- The symbol "-" indicates that the plugin will choose the inversion *automatically* (as by default). The chosen shape will depend from the actual chord and the [Octave] setting. In the example above we have a D Minor 7th chord. With the [Octave] starting at C3, the chord is laid out as C3-D3-F3-A3, which is actually a third inversion. This is chosen automatically by Progressive.
- The "0" imposes to the chord the *root shape* (shape which starts from the tonic and goes up in pitch). In the example above the D Minor 7th chord is set in Root shape as D3-F3-A3-C4.
- The "1" causes the *first inversion* to be used (moving down the keyboard the third note of the basic triad, which is the fifth intervals). This gives the following in the example above: A2-C3-D3-F3
- The "2" gives the *second inversion* (moving down the keyboard the third and second notes of the basic triad, the fifth and the third intervals). This gives the following in the example above: F2-A2-C3-D3
- The "3" is applicable only to chords of four notes and starts the chord from the added fourth note (the seventh in the example): C3-D3-F3-A3. This is often called *third inversion*. This shape was actually the shape Progressive would have chosen by default in this case.

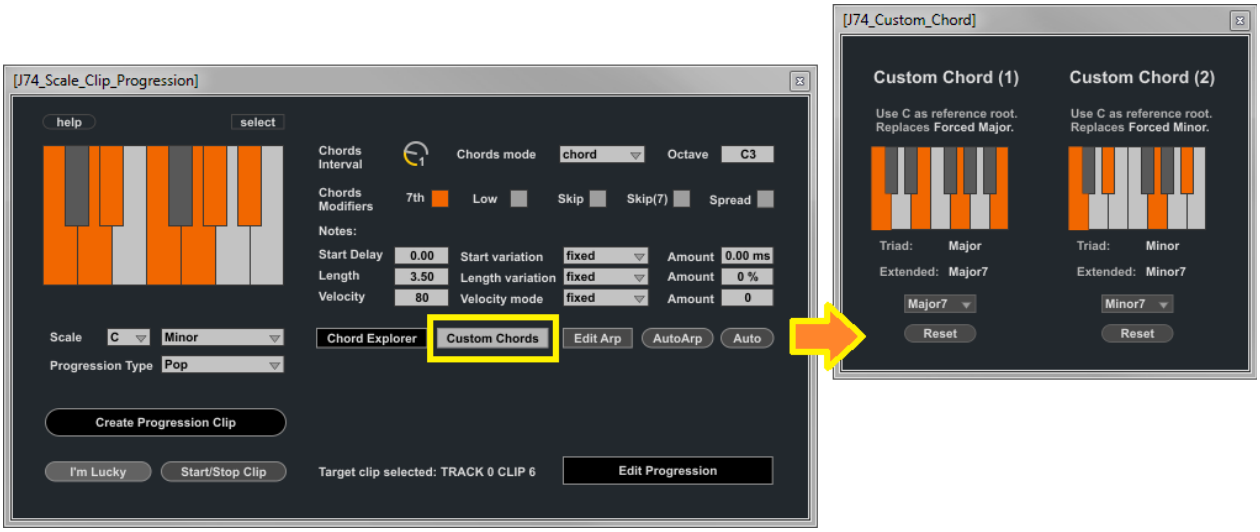
Specifying custom chord shapes

By default the forced to Major and forced to Minor options of the [modifier] matrix adopt a diatonic method for chord extension, as forced chords are extended using perfect fifths intervals of a corresponding major or minor scale (in such a way the resulting chord becomes the root chord of the corresponding scale).

To make it more concrete, let's consider a C Minor scale (C, D, Eb, F, G, Ab, Bb) and suppose degree 1 to be forced to Major. The resulting forced chord, if extended, would be:

- A Major 7th (if no dot is placed on first four rows of [modifier] matrix), C Major7 chord: C E G B
- An Add9 ("7 >> 9" selected in the [modifier] matrix), C Add9 chord: C D E G
- A Major 7 Sus4 ("7 >> 11" selected in the [modifier] matrix), C Major7 Suspended 4 chord: C F G B
- A Major 6 (sixth) ("7 >> 13" selected in the [modifier] matrix), C Major6 chord: C E G A
- A Major triad ("7 mute" selected in the [modifier] matrix), C Major chord: C E G

In Progressive this default behavior can be modified. To do this you can use the Custom Chord configuration view. You can open this view from the Main Progression View, using the [**Custom Chords**] button (see below picture).



The Custom Chord configuration view presents a *left and a right section*, with two chord shapes:

- The first shape, Custom Chord 1, is linked tot the force to major option (fifth row) on the [modifier] matrix and is configured by default with a Major7 shape
- The second shape, Custom Chord 2, is linked to the force to minor option (sixth row) on the [modifier] matrix and is configured by default to a Minor7 shape.

You can modify these shapes in two ways:

- By hand, clicking on the little one octave piano keyboard and selecting up to four notes, as you like.
- By using the [**Chord Menu**] (located below the little piano keyboard) and selecting one of the shapes in the list.

Note: You can quickly go back to the default Major7 or Minor7 shapes by using the respective [**Reset**] buttons.

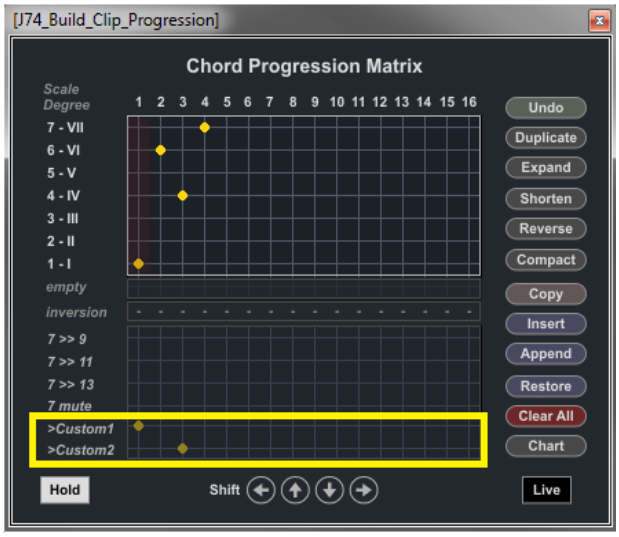
Example of Custom Chords

As an example we will change Custom Chord 1 into a Dominant 7th shape and Custom Chord 2 into a Major-Minor 7th shape. In both cases we will do it by selecting the shape name from the corresponding menu.

This is what we get:

As you can see the shape of both chords has been changed.

If we now look into the Chord Progression Matrix view you can notice that the names for the last two rows of the [modifier matrix] have been modified into >Custom1 and >Custom2, to signify a custom shape is in use:



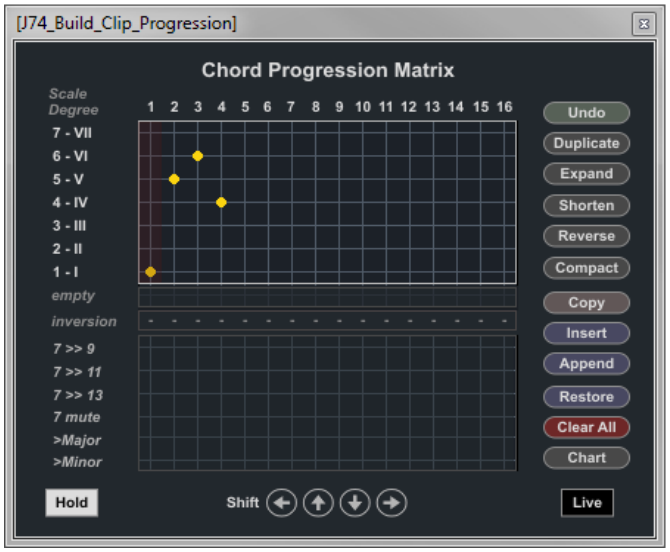
If we now take the case of the Custom Chord 1 shape, extensions using a Dominant 7th shape will result into:

- A **Dominant 7th** (no dot on first four rows of [modifier] matrix), a C 7 chord: C E G **Bb**
- An Add9 ("7 >> 9" selected in the [modifier] matrix), a C Add9 chord: C D E G
- A (Dominant) **7 Sus4** ("7 >> 11" selected in the [modifier] matrix), a C Major7 Suspended 4 chord: C F G **Bb**
- A Major 6 (sixth) ("7 >> 13" selected in the [modifier] matrix), a C Major6 chord: C E G A
- A Major triad ("7 mute" selected in the [modifier] matrix), in the example a C Major chord: C E G

Tip: Custom chord shapes and custom chord forced tonic (root) can be freely combined. Also notice that the Chord Explorer will reflect your customizations and always show the available chords (and related tension).

Sequencing and editing operations on progressions

Here a list of all the sequencing and editing operations available on the Chord Progression Matrix:



- [**Left/Right**] Shift arrows: Applies a rotation to the left or to the right
- [**Up/Down**] Shift arrows: Move the progression one degree up or down
- [**Undo**]: does an undo of the last operation
- [**Duplicate**]: duplicates the Progression
- [**Expand**]: shifts right and duplicates the first chord
- [**Shorten**]: shifts left and removes the first chord
- [**Reverse**]: reverses the chord progression
- [**Compact**]: removes any chord repetition
- [**Copy**]: copies the progression in memory (for paste action like Insert, Append or Restore)
- [**Insert**]: does a paste of the last copy before the current progression
- [**Append**]: does a paste of the last copy after the current progression
- [**Restore**]: deletes all and does a paste of the last copy
- [**Clear All**]: erases the progression entirely
- [**Chart**]: opens the Chart view as reference information

Note: the Undo operation reverts only the last operation.

Tip: Try the Shift operations! They do not change the length of the progression but alter its movement (in the case of left/right shifting) or even its nature (in the case of up/down) shifting.

Tip: a very useful combination while editing, specially if using preset progression, id the use of [Copy] in conjunction with either [Insert] or [Append]. This way you can chain together several progressions into a longer progression.

Tip: as already mentioned the [Duplicate] command is very useful in combination with the [Spread] option turned on. The chords, even if repeated, will be plot each time differently.

The Chord Explorer

The Chord Explorer is a tool for chord exploration and performance. The tool provides *all the available chords in the scale* as well as *all the chords possible through the modifiers rules* in Progressive. The chords are assigned to dedicated *buttons* and can be played and combined on the fly, *by using pads or keys on a MIDI a controller or by using the mouse*. The tool can be launched from the launch window and from Chord Progression Editor.

[J74_Chord_Explorer]
T
Load New Mappings
Launchpad
Show CoF
Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth) Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth) Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth) Force Root
1 C Major C Major7 C add9 C Ma7Sus4 A Minor7 C Major C Major7 C add9 C Ma7Sus4 C 6 C Minor C Minor7 C MinAdd9 C 7sus4 C Minor6 C
2 D Minor D Minor7 D MinAdd9 D 7sus4 B m7b5 D Major D Major7 D add9 D Ma7Sus4 D 6 D Minor D Minor7 D MinAdd9 D 7sus4 D Minor6 D
3 E Minor E Minor7 E 7sus4 C Major7 E Major E Major7 E add9 E Ma7Sus4 E 6 E Minor E Minor7 E MinAdd9 E 7sus4 E Minor6 E
4 F Major F Major7 F add9 F 6 F Major F Major7 F add9 F Ma7Sus4 F 6 F Minor F Minor7 F MinAdd9 F 7sus4 F Minor6 F
5 G Major G Dom7th G add9 G 7sus4 G 6 G Major G Major7 G add9 G Ma7Sus4 G 6 G Minor G Minor7 G MinAdd9 G 7sus4 G Minor6 G
6 A Minor A Minor7 A MinAdd9 A 7sus4 F Major7 A Major A Major7 A add9 A Ma7Sus4 A 6 A Minor A Minor7 A MinAdd9 A 7sus4 A Minor6 A
7 B dim B m7b5 F Maj7b5 G Dom7th B Major B Major7 B add9 B Ma7Sus4 B 6 B Minor B Minor7 B MinAdd9 B 7sus4 B Minor6 B
<<
CHORDS IN SCALE
FORCED TO MAJOR
FORCED TO MINOR
Show Tension

Here a few situations for which the Chord Explorer may result useful:

- *Define your chord palette to work with*: you can try the chords in free format to find something you like. Note the chords down (degree number and chord type) and try to build a progression starting from here.
- *Looking for the next chord*: while creating a progression you often ask yourself which could be the next chord. While programming you can quickly try the chords by just click on their Chord Explorer buttons.
- *Jam to find inspiration*: the buttons on the Chord Explorer are MIDI mappable (to incoming MIDI notes). So you can map them to a physical controller and try to jam with them hands-on. This way you can come up with progressions while not looking at your computer screen.

The chord buttons

The Chord Explorer presents the chords in a logical way: on the vertical axis you have the *degrees* (1 to 7) while on the horizontal axis you have the various *chord options,* given by the rules of the [modifier] matrix, with the left section of buttons focused on the diatonic chords, the center section on forced to major (or [Custom1]) chords and the right section on forced to minor (or [Custom 2]) chords. The chords notes and names are populated dynamically. If you change root or scale names and notes assigned to the buttons will be refreshed automatically.

Note: if *no chord name* is assigned to a button the corresponding chord does not fit any of the common chord shapes. This is related to the fact that a high level of *dissonance* is present in the resulting set of notes.

Besides the chord buttons, a few other controls are available on the Chord Explorer:

- The [T/M] toggle defines how the buttons behave: toggle (T) or momentary (M) mode.
- At the right of the [T/M] toggle you can find the [Load New Mappings] button and [Preset Mappings] menu. They can be used to load different MIDI note input mappings. The [Preset Mappings] offers some presets for popular options (such as Novation Launchpad or a standard MIDI keyboard). The [Load New Mappings] button allows you to load custom mappings which can match any MIDI controller sending MIDI notes. See Appendix 1 for instructions on how to create custom mappings.
- The [Show Tension] enables *visualization of the chord harmonic tension* in the current context.
- The [Show CoF] opens a separate window focusing on the *Circle of Fifths*
- The [Force Root] column allows you to *overrule the root (tonic) of forced chords*.

Let's now look at the other controls of the Chord Explorer, such as the [**Show Tension**] function, the [**Show CoF**] additional view and the [**Force Root**] column.

The Chord Explorer: visualizing Chord Tension

When adding variations, such as using forced major or minor chords, it can be useful to know in advance *how much a given choice would depart from the current scale* (and from the related diatonic set of chords): a characteristic known in harmony as *"Tension"*.

What is Tension?

Tension is a characteristic of a chord within a specific context (e.g. a selected scale). Tension creates intensity and emphasis, somehow departing from the expected movement of chords belonging purely to the selected scale (the diatonic chords). In practice it is the result of *adding some level of dissonance* into the mix.

One approach to tension is to apply *chord extension within the diatonic boundaries, within a single chord itself* (that is: add or modify the notes in the chord while still using notes *belonging to the same scale*). Seventh chords for instance add just a little level of tension as the extra note, a perfect fifth away from the third in the triad, is still quite consonant with the rest of the chord (it is a series of fifths). Suspended chords instead create more tension, as this type of chord is unresolved (it has no third) and creates a form of relative dissonance between the notes.

Tip: for chord extensions and alteration in Progressive, look at the extension options in the [modifier] matrix.

Another approach to tension, usually with a more substantial effect, is to introduce chords with notes *outside the selected scale, creating dissonance between chords*. This is for instance the effect of introducing *borrowed chords*, chords which originally come from another mode or scale. This often translates into forcing a chord which was originally a minor into major or viceversa. If overdone this approach can result in excessively dramatic passages or even fall into a *cliché* (think about all the pop ballads in the 80's raising the entire progression of one full tone towards the end of the song...). But if done sparsely it can end up creating a lush progression.

Tip: for borrowed (forced) chords in Progressive, look at force to major/minor options in the [modifier] matrix.

Is it possible to measure the tension level of chord? How to know in advance what effect a change would have?

In Progressive a simple method is available for this: *using colors to visualize the level of tension a chord would have in the context of the selected scale*. This is what the [**Show Tension**] toggle, if enabled, does.

Here the example of layout the Chord Explorer gets with [Show Tension] enabled, while using a C Major scale:

[J74_Chord_Explorer]
T
Show CoF
Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth)
Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth)
Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth)
Force Root
1 C Major C Major7 C add9 C Ma7Sus4 A Minor7 | C Major C Major7 C add9 C Ma7Sus4 C 6 | C Minor C Minor7 C MinAdd9 C 7sus4 C Minor6 C
2 D Minor D Minor7 D MinAdd9 D 7sus4 B m7b5 | D Major D Major7 D add9 D Ma7Sus4 D 6 | D Minor D Minor7 D MinAdd9 D 7sus4 D Minor6 D
3 E Minor E Minor7 E 7sus4 C Major7 | E Major E Major7 E add9 E Ma7Sus4 E 6 | E Minor E Minor7 E MinAdd9 E 7sus4 E Minor6 E
4 F Major F Major7 F add9 F 6 | F Major F Major7 F add9 F Ma7Sus4 F 6 | F Minor F Minor7 F MinAdd9 F 7sus4 F Minor6 F
5 G Major G Dom7th G add9 G 7sus4 G 6 | G Major G Major7 G add9 G Ma7Sus4 G 6 | G Minor G Minor7 G MinAdd9 G 7sus4 G Minor6 G
6 A Minor A Minor7 A MinAdd9 A 7sus4 F Major7 | A Major A Major7 A add9 A Ma7Sus4 A 6 | A Minor A Minor7 A MinAdd9 A 7sus4 A Minor6 A
7 B dim B m7b5 F Maj7b5 G Dom7th | B Major B Major7 B add9 B Ma7Sus4 B 6 | B Minor B Minor7 B MinAdd9 B 7sus4 B Minor6 B
<<
CHORDS IN SCALE
FORCED TO MAJOR
FORCED TO MINOR
Show Tension

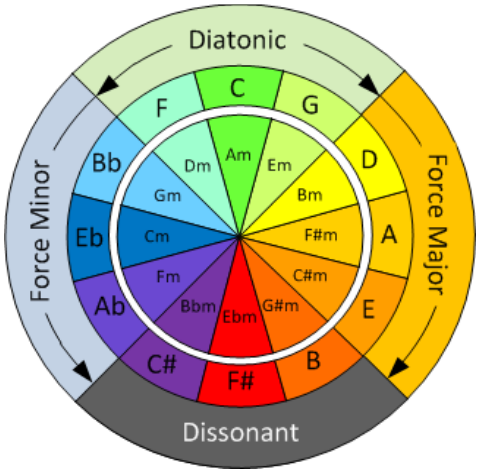
The colors are used to show the level of tension associated to chords. Let's see now how to interpret this layout.

How the Tension color of a chord is defined

The tension (color) is defined by using the *Circle of Fifths*. For what Progressive is concerned, the circle is used here to show the *relationship between the chords and to measure the chord tension*.

> Tip: explaining the logic behind the Circle of Fifths goes far beyond the scope of this manual. If you are interested and like to know more, just search on the Internet and you'll be surprised by how many explanations, discussions and articles are available on the topic. Anyway, if you just like to explore it, you can have a look to the Circle of Fifth view available in Progressive, as explained later in this manual.

Taking into reference the C Major scale we will have the following Circle of Fifths diagram:



In our context the Circle of Fifth provides this information:

- On the middle circle, with capital notes symbols (C, G, D, etc.), you see the root of *major triad chords*.
- On the inner circle, with lowercase notes symbols (Am, Em, etc.), you see the root of *minor triad chords*.
- On the outer ring it shows the *harmonic region* for a chord (within the context of the selected scale).

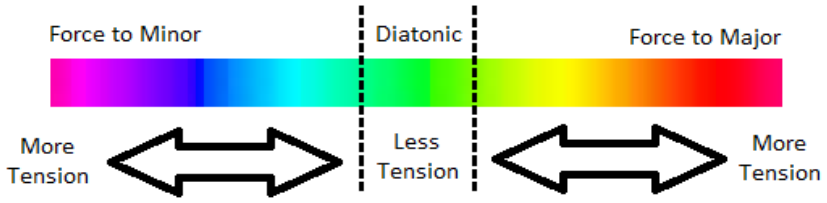
If you look at the diagram you can notice a portion called *Diatonic region*. This region spreads the three upper/central sections and includes the diatonic chords (majors and minors) associated to the scale: majors are on the middle circle (C, F, G) and minors on the inner circle (D, A, E).

When we force one of the diatonic chords into another chord type (for instance from G Major to G Minor), we are effectively *moving away* from the Diatonic region and *temporary changing scale* (for the duration of the new chord). The position of the destination chord after forcing (in this example the location of the G Minor chord) defines *how much we depart* from the diatonic region and therefore the level of *tension* we introduce. The further we go, the highest the level of tension we introduce.

The musical reason for this is related to the number of *mutations* (and therefore *accidentals*) which are needed, from the current scale to a new scale which has as root chord the selected new chord. Moving one section on the circle requires one mutation (one accidental, which would be a flat if moving counterclockwise, a sharp if moving clockwise); moving two sections requires two mutations (two accidentals) and so on. The Circle of Fifth can tell us also which flats or sharps are needed, but that exceeds the intent of this explanation. What you just need to know is that J74 Progressive calculates this for you (although you can see it by yourself if you like, by looking at the Circle of Fifths view enabled by the [Show CoF] option).

The color scheme

The colors follow a “spectrum of energy or temperature” logic to represent the magnitude of the tension level:



- Green is used to represents the *lowest tension* (applicable to chords in the Diatonic region).
- Moving counterclockwise *increases tension* (adds flats *b*'s), with colors gradually changing from green to cyan, blue, purple and finally red (the *highest* tension level), to signify the increased tension.
- Moving clockwise also *increases tension* but on the *opposite direction* (adding *#*'s instead of *b*'s). Colors gradually change from green to yellow, orange and red again (this time reached from the other direction).

These are the colors shown by the Chord Explorer with [**Show Tension**] enabled and C Major as selected scale:

[J74_Chord_Explorer]
T
Show CoF
Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth) Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth) Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth) Force Root
1 C Major C Major7 C add9 C Ma7Sus4 A Minor7 C Major C Major7 C add9 C Ma7Sus4 C 6 C Minor C Minor7 C MinAdd9 C 7sus4 C Minor6 C
2 D Minor D Minor7 D MinAdd9 D 7sus4 B m7b5 D Major D Major7 D add9 D Ma7Sus4 D 6 D Minor D Minor7 D MinAdd9 D 7sus4 D Minor6 D
3 E Minor E Minor7 E 7sus4 C Major7 E Major E Major7 E add9 E Ma7Sus4 E 6 E Minor E Minor7 E MinAdd9 E 7sus4 E Minor6 E
4 F Major F Major7 F add9 F 6 F Major F Major7 F add9 F Ma7Sus4 F 6 F Minor F Minor7 F MinAdd9 F 7sus4 F Minor6 F
5 G Major G Dom7th G add9 G 7sus4 G 6 G Major G Major7 G add9 G Ma7Sus4 G 6 G Minor G Minor7 G MinAdd9 G 7sus4 G Minor6 G
6 A Minor A Minor7 A MinAdd9 A 7sus4 F Major7 A Major A Major7 A add9 A Ma7Sus4 A 6 A Minor A Minor7 A MinAdd9 A 7sus4 A Minor6 A
7 B dim B m7b5 F Maj7b5 G Dom7th B Major B Major7 B add9 B Ma7Sus4 B 6 B Minor B Minor7 B MinAdd9 B 7sus4 B Minor6 B
<<
CHORDS IN SCALE
FORCED TO MAJOR
FORCED TO MINOR
Show Tension

Interpretation:

- All chords marked in Green *add no tension* (or just the tension level given by extension or alteration). They are diatonic to the scale.
- For forced chords you can notice that some forced-to-major chords are marked in Yellow (for instance the second degree), while some forced-to-minor chords are marked in Cyan (degree 5). In both cases these chords will add limited level of tension (give by a single accidental, as one note outside the scale is used).
- Instead forced chords marked in Orange (forced majors) and Purple (forced minors) will add more tension (with two or more accidentals being introduced).

Note: when you change scale, chords tension colors are *updated automatically*. This applies to the diatonic modes (major, dorian, phrygian, etc.) but also to more exotic scales (in the latter case, while the idea of Diatonic region is gone, tension can still be calculated based based on the number of accidentals a forced chord would introduce).

Note: a complementary view on the relationships between the chords is available using the Circle of Fifth view, which is explained later in this manual. Use the views together to get a better grasp on *why* things are what they are....

The Chord Explorer: forcing a chord root

The [Force Root] column (on the right side of the Chord Explorer) allows you to *overrule the root (tonic) of forced chords*. As we explained Progressive allows you to introduce chords outside the rules of the diatonic method by using the [modifier] matrix. The [Force Root] can be used to change the root of those forced chords.

Use case: introduce a chord having as root a note *outside* the selected scale

Let's make a use case example to make this application clearer. Let's suppose C Major is the selected scale. In a major scale the seventh degree is always a diminished chord, a chord which is often difficult to use as it has quite a dissonant character (dissonant from the perspective of the chord itself, not of the scale). If we look at the Circle of Fifth from the previous paragraph, we would notice that a possible alternative, one just one section away from the diatonic region, would be to use a Bb Major chord (a chord with only one accidental, the Bb tonic note itself). Anyway Bb is not one of the notes in the scale. The feature described in this section points exactly to this case: the idea of *using chords with root (tonic) note outside of the selected scale*.

Forcing a chord root note, while forcing chords

If you open the Chord Explorer you will notice on the right end *a column with note names*. By default these notes match the degrees (notes) of the selected scale. These are the notes used as root (tonic) note for *all forced chords*.

[J74_Chord_Explorer]
T
Show CoF
Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth) Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth) Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth) Force Root
1 C Major C Major7 C add9 C Ma7Sus4 A Minor7 C Major C Major7 C add9 C Ma7Sus4 C 6 C Minor C Minor7 C MinAdd9 C 7sus4 C Minor6 C
2 D Minor D Minor7 D MinAdd9 D 7sus4 B m7b5 D Major D Major7 D add9 D Ma7Sus4 D 6 D Minor D Minor7 D MinAdd9 D 7sus4 D Minor6 D
3 E Minor E Minor7 E 7sus4 C Major7 E Major E Major7 E add9 E Ma7Sus4 E 6 E Minor E Minor7 E MinAdd9 E 7sus4 E Minor6 E
4 F Major F Major7 F add9 F 6 F Major F Major7 F add9 F Ma7Sus4 F 6 F Minor F Minor7 F MinAdd9 F 7sus4 F Minor6 F
5 G Major G Dom7th G add9 G 7sus4 G 6 G Major G Major7 G add9 G Ma7Sus4 G 6 G Minor G Minor7 G MinAdd9 G 7sus4 G Minor6 G
6 A Minor A Minor7 A MinAdd9 A 7sus4 F Major7 A Major A Major7 A add9 A Ma7Sus4 A 6 A Minor A Minor7 A MinAdd9 A 7sus4 A Minor6 A
7 B dim B m7b5 F Maj7b5 G Dom7th B Major B Major7 B add9 B Ma7Sus4 B 6 B Minor B Minor7 B MinAdd9 B 7sus4 B Minor6 B
<<
CHORDS IN SCALE
FORCED TO MAJOR
FORCED TO MINOR
Show Tension

As you would expect by now, these notes can be changed. Following our example, we change the root of the seventh degree from B to Bb, as in the picture below:

[J74_Chord_Explorer]
T
Show CoF
Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth) Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth) Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth) Force Root
1 C Major C Major7 C add9 C Ma7Sus4 A Minor7 C Major C Major7 C add9 C Ma7Sus4 C 6 C Minor C Minor7 C MinAdd9 C 7sus4 C Minor6 C
2 D Minor D Minor7 D MinAdd9 D 7sus4 B m7b5 D Major D Major7 D add9 D Ma7Sus4 D 6 D Minor D Minor7 D MinAdd9 D 7sus4 D Minor6 D
3 E Minor E Minor7 E 7sus4 C Major7 E Major E Major7 E add9 E Ma7Sus4 E 6 E Minor E Minor7 E MinAdd9 E 7sus4 E Minor6 E
4 F Major F Major7 F add9 F 6 F Major F Major7 F add9 F Ma7Sus4 F 6 F Minor F Minor7 F MinAdd9 F 7sus4 F Minor6 F
5 G Major G Dom7th G add9 G 7sus4 G 6 G Major G Major7 G add9 G Ma7Sus4 G 6 G Minor G Minor7 G MinAdd9 G 7sus4 G Minor6 G
6 A Minor A Minor7 A MinAdd9 A 7sus4 F Major7 A Major A Major7 A add9 A Ma7Sus4 A 6 A Minor A Minor7 A MinAdd9 A 7sus4 A Minor6 A
7 B dim B m7b5 F Maj7b5 G Dom7th Bb Major Bb Major7 Bb add9 Bb Ma7Sus4 Bb 6 Bb Minor Bb Minor7 Bb MinAdd9 Bb 7sus4 Bb Minor6 Bb
<<
CHORDS IN SCALE
FORCED TO MAJOR
FORCED TO MINOR
Show Tension

As you can see the Bb note becomes highlighted in red (signifying the root for the forced chord on this degree has been changed from the default of the selected scale).

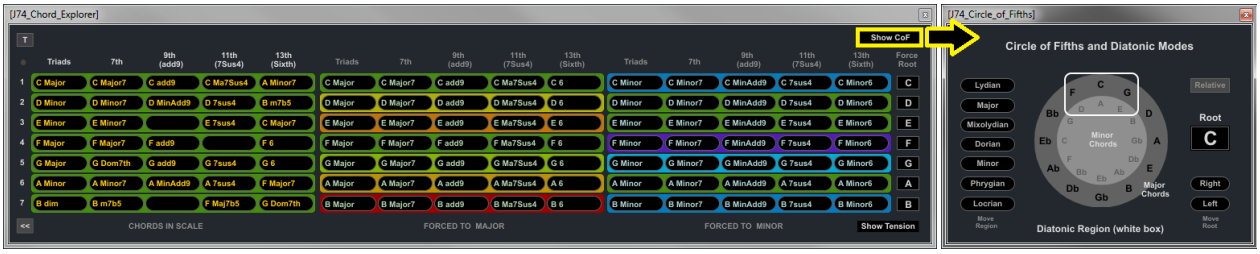
Note: changing the root note applies *only to forced chords* (dots on fifth or sixth row of the [modifier] matrix). So, if you force the root note of a degree, this would be the effect:

- If a yellow dot is inserted on the fifth row of the [modifier] matrix for a degree, the corresponding forced to Major (or forced to Custom1) chord will have the selected forced root note from this note column
- If a yellow dot is inserted on the sixth row of the [modifier] matrix for a degree, the corresponding forced to Minor (or forced to Custom2) chord will have the selected forced root note from this note column
- If no dot is inserted on the fifth and sixth rows of the [modifier] matrix for a degree, the diatonic chord with the original root note will be used (ignoring the forced root from this note column)

The Circle of Fifth View: visualization and navigation of the diatonic modes

Among its many properties, the *Circle of Fifths* allows you to *visualize* the relationship between notes and chords. This is useful while making decisions on what, in terms of chord variation, may work well or not.

Progressive provides a dedicated Circle of Fifths visualization window: from the Chord Explorer you can open the Circle of Fifths View by enabling the [**Show CoF**] toggle, which is located in the right/top corner of the Chord Explorer (the Main Window will be open automatically in this case, as it is required for the CoF View to work).



The Circle of Fifth View provides the following information:

- The location of the Diatonic region (highlighted with a white box) belonging to the selected diatonic mode.
- The location and type of chords and, therefore, how close or far chords are they from the Diatonic region.

Note: with *diatonic modes* literature refers to the scales *derived from* the Major scale, by *shifting the root position* (the starting note). The modes correspond to the Major, Dorian, Phrygian, Lydian, Mixolydian, Minor (aka Aeolian or Natural Minor) and Locrian scales. As these scales are *derived from* the Major scale, they are often addressed to as *modes* instead of scales. The modes are of course available as options of the [scale] menu in the Main Window.

The tool provides you with the following controls:

- [**Root**] to transpose the circle notes, changing the [root] parameter in the Main window as well.
- [**Mode**] buttons to change mode (and Main window [scale]), moving to a different region on the circle.
- [**Left**] or [**Right**] to rotate the root of the circle (and change the [root] on the Main window accordingly).
- [**Relative**] option, if enabled, for a relative move of mode on the circle: if enabled, using the [Mode] buttons, *both* [root] and [scale] will be adapted in order to select *a relative mode* of the current scale (e.g from C Major to A Minor), which keeps the note set intact.

As a planning tool the information provided by the Circle of Fifth View can be useful, among other things, to:

- Identify which forced chord or forced root option could work well for a borrowed chord. If you look at the circle (and selected a diatonic mode as scale to work with) you can visualize the Diatonic Region, highlighted by a white box. This region shows you the native major chords (outer circle) and minor chords (inner circle) for the scale. Outside this region lay other chords (majors and minors), which although not diatonic, may work well as borrowed chords. For instance the neighboring chords, just outside the Diatonic Region, may work well as one-off substitutes of diatonic chords, as their tension will be relatively low. For example, with C Major as selected scale, this would be the case of the D Major or B Minor in the clockwise direction or of the Bb Major, G Minor in the counterclockwise direction. This information is actually the same as the information give by the tension colors, as shown by the [Show Tension] feature of the Chord Explorer (tension is indeed calculated using the Circle of Fifths as reference).

- Select an alternative mode for a shift of the progression. Instead of one-off chord substitutes (isolated chord changes, leaving all other chords in the progression intact and diatonic to the scale) you can try a *modal shift*, by changing the mode the progression evolves on altogether. For instance if you are working with a Minor scale you may find interesting to temporary change the mode into Dorian, as the Dorian mode is just one sector distant from the Minor mode. Going for neighbor modes is often a good option.

The Arpeggio Editor

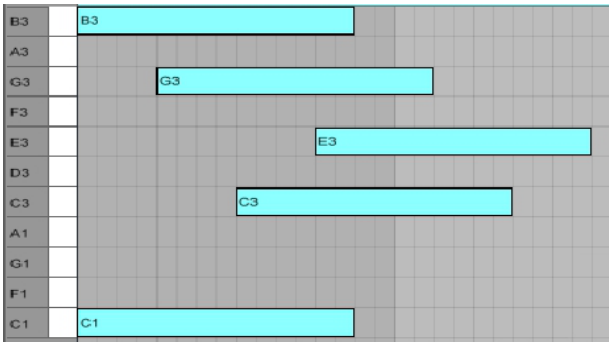
The Arpeggio Editor is where you customize the *way each chord is played*, specifying which note in the chord will be played at what time in the interval. You can launch the tool from the Main window of Progressive.

The grid of the Arpeggio Editor shows the notes in the chord, in order of time: the Tonic (root note in the chord), the 3rd and the 5th, in case of triads, and the added 7th (or note used in the selected form of extension / alteration) and eventually the added Low tonic, if respectively the [7th] and the [Low] options in the Main window are turned ON. Each column is a time event, somehow similar to how a DAW MIDI editor shows notes in time.

To start with an example, see configuration in the picture above. This shows the following:

At time 1 two notes are played: the Low tonic and the 7th (or whatever notes is implied by the [modifier] setup).
At time 2 the 5th is played.
At time 3 the Tonic is played.
At time 4 the 3rd is played.

In case of a C Major chord this note sequence would be generated:



At time 1 the C1 (Low tonic) and B3 (7th) are played
At time 2 the G3 (5th) is played.
At time 3 the C3 (tonic) is played.
At time 4 the E3 (3rd) is played.

Note Timing in the Arpeggio Editor

Time events are defined by the setting of the [**Time Values**] and [**Time Compress**] parameter on the Arpeggio Editor *in combination with* the [**Chord Interval**] value as set in the Main Window.

By default these parameters are set to be the following values:

- [Chord Interval] = 1 (in bars)
- [Time Values] = {0 25 50 75} (percentages of the Chord Interval)
- [Time Compress] = 1.0 (a ratio, from 0. = 0% to 1.0 = 100% of the Chord Interval)

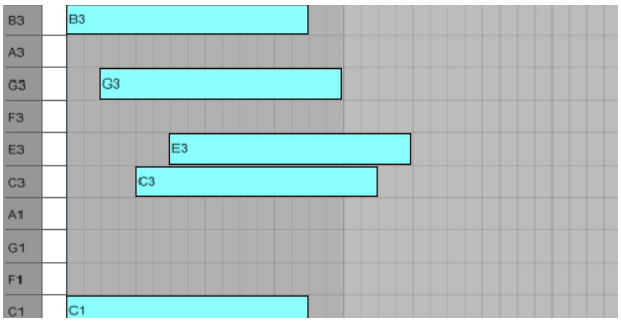
With these defaults, we have the following:

- Chords *are played at a distance of 1 bar from each other*. In other words the first Chord will be inserted at the beginning of bar 1, the second at the beginning of bar 2 and so on. This also means that, if defined as an arpeggio, a chord must be articulated within 1 bar.
- *Intervals in an arpeggio are 1/4th of a bar.* [Time Values] define the percentage of the [Chord Interval] for each time event. So the values of {0 25 50 75} mean that Time1 is the exact beginning of the bar, Time 2 is at 25% of the bar (which is 1/4th of 1 bar), Time 3 is at 50% of the bar (which is at the ½ of 1 bar) and Time 4 is at 75% of the bar (which is 3/4th of 1 bar).
- *Cadence is quantized.* The [Time Compress] setting is a *modifier* of the [Time Values]. It means that the [Time Values] will be calculated on a fraction of the [Chord Interval]. If the [Chord Interval] is set to 1 and the [Time Compress] left to its default of 1.0 note time intervals would be exact (quantized). But if we set the [Time Compress] to a lower ratio the [Time Values] will get "compressed". For example changing [Time Compress] to 0.5 (50%) means the [Time Values] will be halved: so while Time 1 still remains 0, Time 2 becomes 1/8th of the bar, Time 3 is 2/8th = 1/4th and Time 4 is 3/8th.

Let's take the same example with:

- [Chord Interval] = 1
- [Time Values] = {0 25 50 75}
- [Time Compress] = 0.5

This will result in the following:



As you can see the arpeggio gets compressed in time.

Tip: you can omit notes by deselecting the dot on the corresponding row in the Arpeggio editor. This can also be used to create *alternative voicing to chords* (even if the chords are left straight and not set to an arpeggio).

Tip: using the [Time Compress] in conjunction with [Chord Interval] and the [Time Values] you can achieve very powerful results and produce complex rhythmic structures. Next some of the possibilities.

Examples of combinations in arpeggio's:

- You can for instance keep the [Time Values] to their defaults and try decreasing the [Time Compress]. At values like 0.75, 0.66, 0.5 and 0.33 the playing style changes dramatically to things like triplets based structures.

- Combine the [Time Compress] fractional numbers with their "inverse" [Chord Interval] settings. For instance a [Time Compress] of 0.33 on top of a [Chord Interval] of 1 produces a similar effect of [Time Compress] of 0.66 combined with [Chord Interval] of ½, but with the double of chord changes. If you then duplicate each chord in the sequence you essentially double the effect in the same bar....

- Try syncopation by having [Time Values] set to emulate little delays or anticipation. For example instead of {0 25 50 75} you could set the timing to {0 20 60 80} or even unevenly distributed values such as {0 26 49 77} which emulates an a syncopated cadence in playing.

- If you select the *guitar* option in the [Chords Mode] menu of the Main window you can notice that this applies an extremely low [Time Compress] value to an uprising arpeggio. Effectively this achieves the emulation of the strings of a guitar.

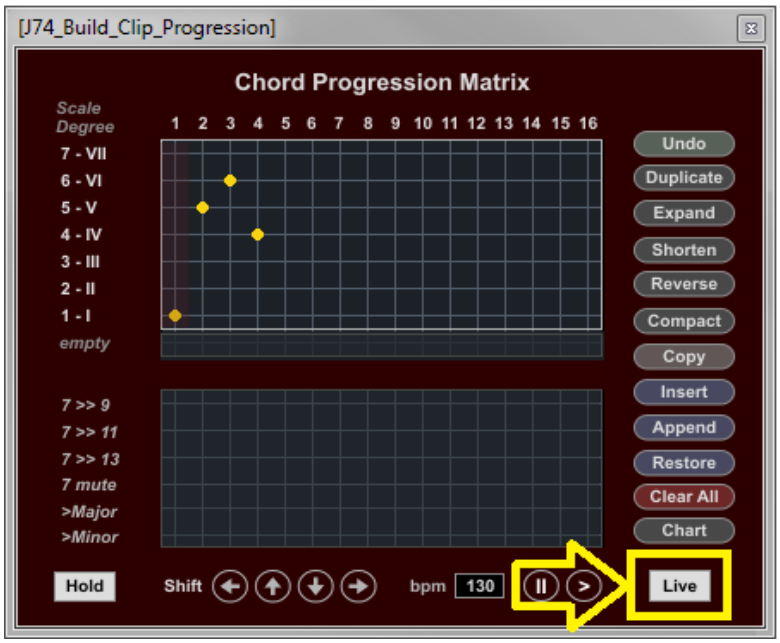
The Arpeggio Editor also offers some additional editing functions, similar to the ones of the Chord Progression Matrix. These controls can be useful for adding variation: for instance try shifting the chord up/down or left/right or try reversing the arpeggio.

The following are the operation possible:

- [**Left/Right**] Shift arrows: Applies a rotation to the left or to the right
- [**Up/Down**] Shift arrows: Moves/Rotates the arpeggio one note up or down
- [**Reverse**]: reverses the arpeggio
- [**Copy**]: copies the arpeggio in memory (for paste action)
- [**Paste**]: deletes all and does a paste of the last copy
- [**Clear All**]: erases the arpeggio entirely

Live Mode

While the main goal of Progressive is to be a MIDI editor for chord progressions, the tool offers also an alternative mode of operation for quick sketching: *Live Mode*. Live Mode is enabled if you set the [**Live**] toggle of the Chord Progression Matrix to *ON* (it is OFF by default). In this case the window will also change to a dark-red background.



What is Live Mode?

In Live Mode you can work with your progression *on the fly*. Instead of producing results into MIDI files, Live Mode *sequences your chords in real-time*. In this mode Progressive generates notes *from within the device*. In this mode changes in the Chord Progression Matrix are applied immediately. This can speed up your creative process, specially if you are still in the process of building the sequence of chords in the progression.

Note: Live Mode generates MIDI in real time. For this to happen you need to set the [**MIDI Output**] so it can use a MIDI port to send MIDI to. In case of working with a DAW you can use a virtual MIDI bus as explained in the Installation notes for the application.

Limitations:

Due to its on the fly nature, less degree of manipulation is possible in this mode. The following limitations apply:

- *No Note variations*: Start Delay, Start Variation, Length and Length variation as well as Velocity Variation are not available. Only the [Velocity] fixed setting is supported.
- *No inversion editing*, chords will be inverted automatically by Progressive, the [inversion row] is disabled.

Note: while Low, Spread, Skip and Arpeggio Editing are supported in Live mode you may find minor differences (specially on Spread and Arpeggio voicing) between Live mode and the MIDI File creation. This is due to the limited control possible in Live mode real time operation.

Live Mode can be useful in many ways, for instance in the following context:

- *The creative stage of building a progression*. You are building your progression and are not completely sure of which chords will be part of it, of which order to use, or you are trying out modifiers for extensions and borrowed chords. In all these cases you can benefit from the directness of Live Mode: changes are applied immediately, without requiring you to create a new clip/file to hear the result of a tweak.
- *Live Performance*. You are improvising live, you defined just the root and scale to work with and would just like to jam. You can manipulate the Chord Progression Matrix as a sequencer of chords, which will remain in harmony with your context.

Transport Controls in Live Mode

- [**Live**] activates Live mode. MIDI notes will be sent in output to the port set by as [MIDI Output]
- [II**/>**] The **Pause/Play** buttons activate the transport. The Pause (**II**) button either continues or pauses play. The Play (**>**) button starts play always from the beginning. If the [Live] toggle is set to ON, MIDI will be sent out and the control cursor will move. If the [Live] toggle is set to OFF only the control cursor will move.
- [**bpm**] defines the tempo in BPM (from 20 to 240 BPM) used by the transport.

Saving and Loading Snapshots
J74 Progressive SE allows you to create *snapshots* of the entire configuration (root, scale, matrix, modifiers, arpeggio, and so on). To save a snapshot use the [**Save Config**] button. To reload a snapshot previously made use the [**Load Config**] button.

Important: be sure to load a snapshot created by J74 Progressive SE and not other files.

The Clip Modifier

The Clip Modifier provides additional tools to further manipulate the progressions produced by the Chord Progression Editor. Functions available to the Clip Modifier include: *harmonization* (transposition of notes in the progression to fit a different scale), *humanized fluctuation* (additional dynamics to both velocity and timing), *swing and groove* (rhythmic adaptation of timing) and *note time and pitch transformation* (manipulation of time and pitch, such as rotation of pitch within a progression or redistribution of notes in time).

Important: The tool works *only on the progressions generated by the Chord Progression Editor*.

The following applies to all functions:

- *Undo*: Each time you make a change you can undo it *within* the tool. The [**Undo**] button always reverts to the state of the original progression or to the last commit state. In fact this offers *unlimited* undo possibilities, independently from how many changes you made. So you can wildly process the progression (e.g. testing it to very different scales or grooves) and always revert back to the original with one click.

- *Commit*: the modifications of the different sections are by default *mutually exclusive*. So if you apply Harmonization and then Humanized Fluctuation, the result would be only the last operation. Anyway it is possible to use “destructive editing” if you like to apply multiple modifications on the same progression. For this to happen you will need to commit the first set of changes before applying the next. This is possible by manually pressing the [**Commit to Clip**] button (on the top of the device). If you like you can make this automatic: on the right/bottom of the device there is a toggle called [**Commit:Manual/Auto**]. If set this to Auto each change will be committed automatically. If you set this to Manual it will apply only the last operation and require manual commit to apply the next, as previously explained.

- *MIDI File results*: The results of the operations of the Clip Modifier are also MIDI files. The file names in this case are “Modified.mid” for any result of applied function and “Undo.mid” for the [Undo] operation. If you apply multiple functions Progressive will overwrite the same “Modifed.mid” file with the new results.

The Clip Modifier: Harmonize section

The Harmonize section (on the left/bottom portion of the device) offers the possibility to adapt the entire progression or a portion of it to any musical scale (a scale potentially different from the one of the original progression). The tool can be useful for radical harmonic transformations, such as modal interchange, specially if applied to sections of the original progression.

The Harmonize tool requires only settings for the target [**Root**] and [**Scale**]. When you press the [**Harmonize Clip**] button the tool will transpose the notes which do not fit the selected target scale.

Transposition is done on a note-by-note basis. The algorithm works in this way:

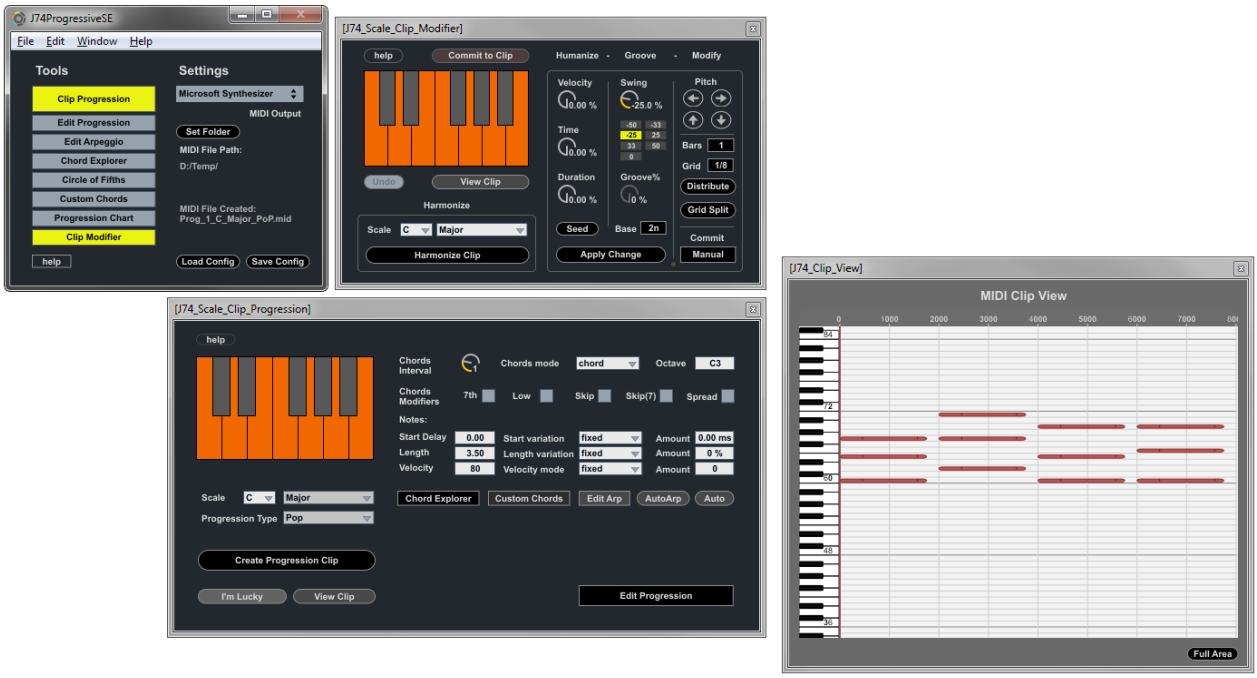
- If the note in the selection is also part of the target scale, nothing happens (the note is maintained).
- If the note in the selection is *not* part of the target scale the note *will be transposed*:
  - In a normal situation the note will be transposed to the next note part of the target scale with the smallest distance from note of the original progression, with preference for transposing down, but...
  - If a subsequent note in the progression overlaps with the resulting transposed note, the transpose action is changed to another note of the target scale, either given by the note having the same distance but being transposed up or having the second smallest distance from the original note.

Tip: The tool works at its best *if the original scale root is the same as the target scale root* (for instance harmonizing / adapting a clip in C Major to C Minor).

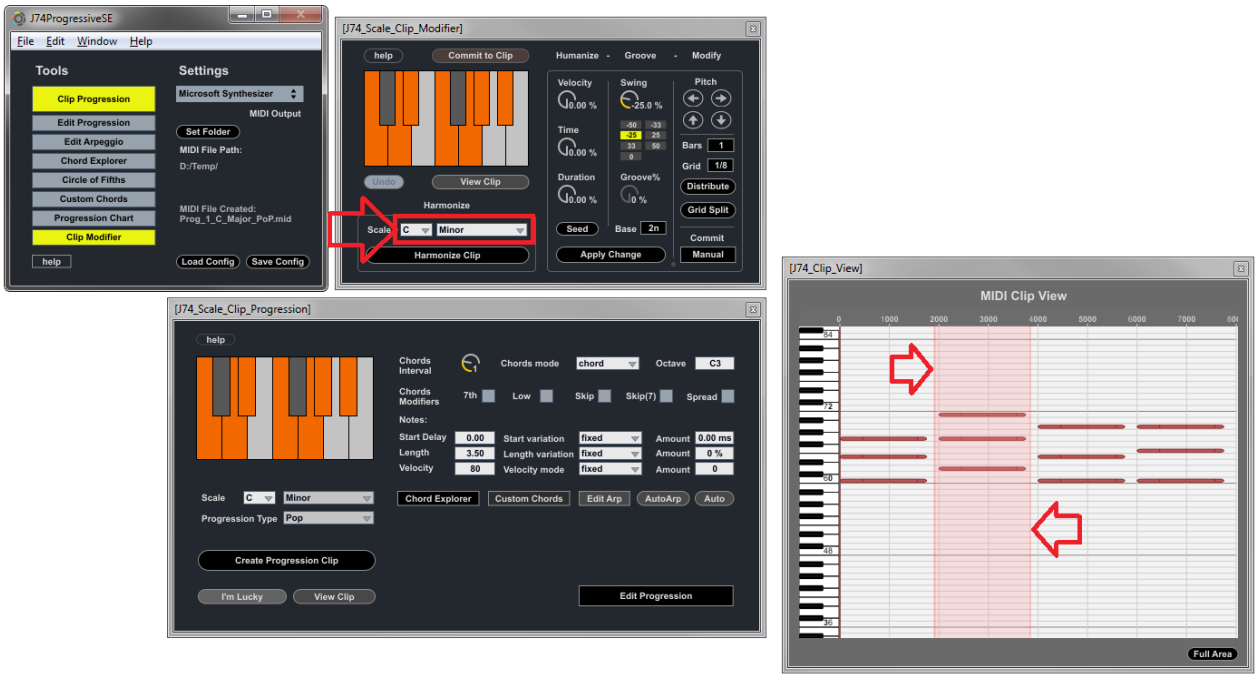
Tip: Harmonize function can be applied to the entire progression *or to a portion of it*. To select the area of interest, open the MIDI Clip Viewer using the [View Clip] button and select the area in the editor.

Next an example of Harmonization.

We create a simple progression 1-5-6-4 is in the C Major scale {C D E F G A B}, as shown here:

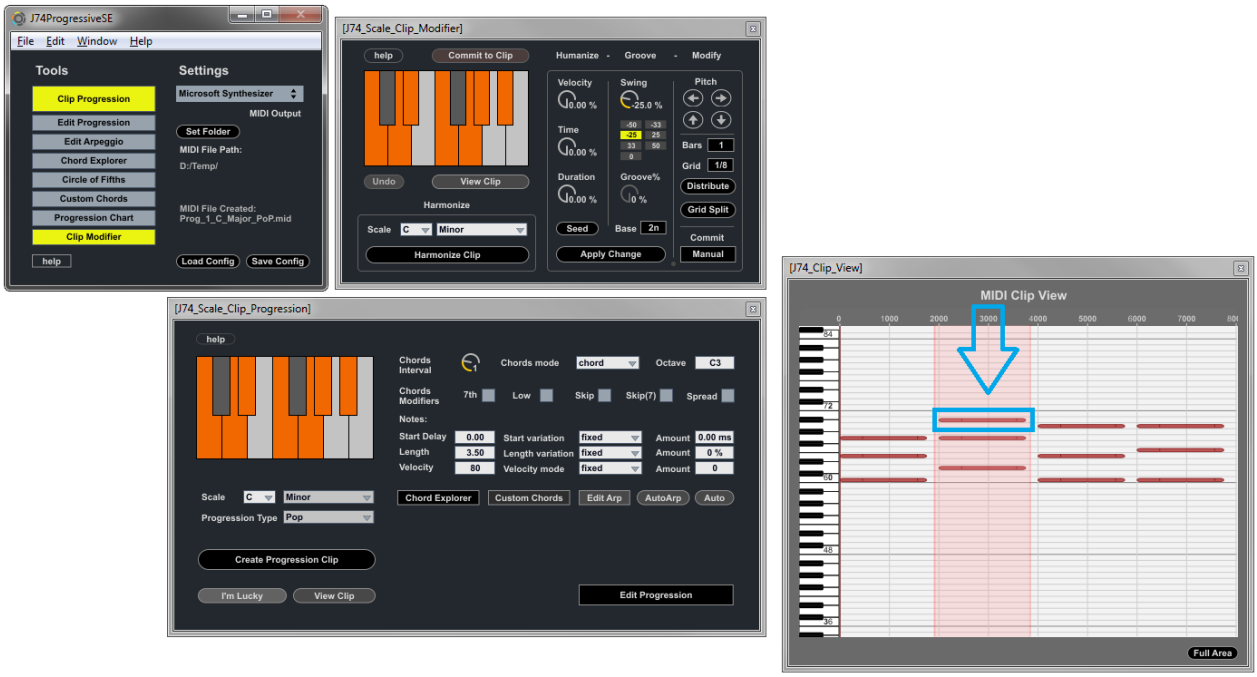


In the [**MIDI Clip View**] we now select window the area we like to harmonize. We select *only the second chord*.



We also select C Minor as the target scale for the harmonization in the [**Root**] / [**Scale**] menu of the Clip Modifier.

We can now harmonize the section by activating the function pressing the [**Harmonize Clip**] button.



As you can see the Harmonize tool has transposed only one note: the B3 has become a Bb3. This is an accidental to the original scale and would result in the G major chord being replaced by the G minor chord.

Tip: The example above shows one of the possible techniques for modal interchange (borrowed chords) in Progressive. An alternative approach is possible using the [modifier] matrix and the Chord Explorer.

The Clip Modifier: Humanize section

The *Humanize section* (on the right/center portion of the device) can be used to add some additional dynamics to a progression. The tools in this section can add a form of randomized fluctuation to velocity, timing and duration.

The available functions are:

- *Velocity Dynamics*: use the [**Velocity**] setting to add a fluctuation component to the original velocity of the notes. The amount defines the fluctuation range around the original values. Fluctuation is applied randomly (+/-) within the range.

- *Time Dynamics*: use the [**Time**] setting (eventually combined with the [**Grid**] setting) to introduce fluctuation on the original timing. In this case fluctuation is based on a random feed. The [Grid] defines the reference (by default within a 1/16th slot) while the [Time] the variance range.

- *Duration Dynamics*: use the [**Duration**] settings to introduce fluctuation on the original duration. It is normally a good idea to combine it with [Time] fluctuation if you are after a more human feel. If you are playing with leads and bass though it may be useful to use the duration alone (e.g. for some glide effect).

To apply the Humanize function you must press the [**Apply**] button.

Note: the fluctuations are random based and underwater random numbers are generated for each note. If you change the controls for velocity, time and duration you retain these random numbers, just changing the amplitude of the effect. If you like to generate new random numbers, use the [**Seed**] button.

Tip: Humanize function can be applied to the entire progression or to a portion of it. To select the area of interest, open the MIDI Clip Viewer using the [View Clip] button and select the area in the editor.

The Clip Modifier: Groove section

The *Groove Section* allows you to *manipulate the note timing in a rhythmic way*. The section provides two separate effects, Swing and Groove, each with a different rhythmic goal.

[**Swing%**]

The Swing effect adds *incremental anticipation or hesitation* to the notes. This is a powerful tool for giving the progression an unusual, funky cadence. Negative values anticipate the note timing, positive values delay them. The *incremental* nature is defined by the combination of the [**Swing%**] value and the [**Base**] setting and can easily provide ways to add triplets or 32nd notes in the mix.

Useful rhythmic values for generating triplets and 32nd notes are the integer fractions such as: 1/4 (+/-25%), 1/3 (+/-33%), 1/2 (+/-50%). These values can be quickly set up using the little box below the [Swing%] control. Other [Swing %] values, unrelated to such fractions, will create a more unusual syncopation. As mentioned, an important factor which affects how the incremental time shifting is applied is the setting of the [Base] control, which is explained just a few lines below.

[**Groove%**]

The Groove effect adds *per note independent random anticipation or hesitation*. The overall result has a more random emphasis compared to [Swing%], as the timing has a random component. Again you can combine the [Groove%] values with the [Base] setting as explained below. It is also important to notice that in the case of [Groove%] the [**Seed**] button can be used to generate a new random probability set. The [Seed] does not affect the [Swing%] effect.

[**Base**]

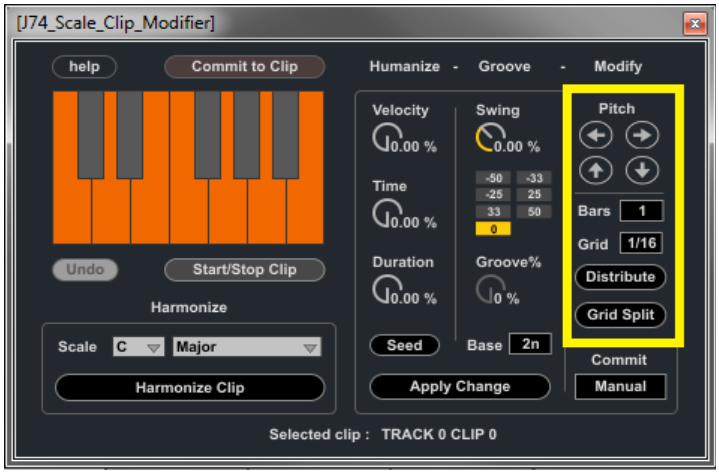
The [Base] setting affects both the [Swing%] and [Groove%] effects. This setting defines the *area for the effects to be applied/looped on.* Essentially this influences which beats will be less affected (and more "on beat") and which will be more effected (and potentially more “off beat” or moved towards triplets or 32nd notes).

Possible values for [Time Base] are:

- 4n (or a 1/4th interval)
- 2n (or a 1/2th interval)
- 2dot (or 3/4th interval)
- 1n (or full bar interval)

The Clip Modifier: Modify section

The *Modify section* adds a few special functions to manipulate note pitch and timing creatively.



The Modify section adds the following extra processing functions:

- *Pitch Shifting* (Left / Right & Down / Up): this function *retains the timing* in the progression but *affects the pitch* of the note events. In the Left / Right case pitch is shifted to the previous / next note event *in time of the original progression*. In the Down / Up case pitch is shifted to the previous / next note pitch *in the selected scale*. Try adding a progression modified by shifting Left or Right after a few repetitions of the original one or try the shift Down / Up function on it to hear the effect by yourself.

- *Pitch Distribution*: the [Distribute] function (somehow opposite of the previous one) takes a progression and redistributes its notes (same pitches) using *new timing*. Two parameters are available to influence the time distribution:
  - [Bars], which defines the area (in bars, indeed) for collecting notes and doing the redistribution. The redistribution will restart at each [Bars] specified interval.
  - [Grid], which defines the resolution of the interval used for the notes

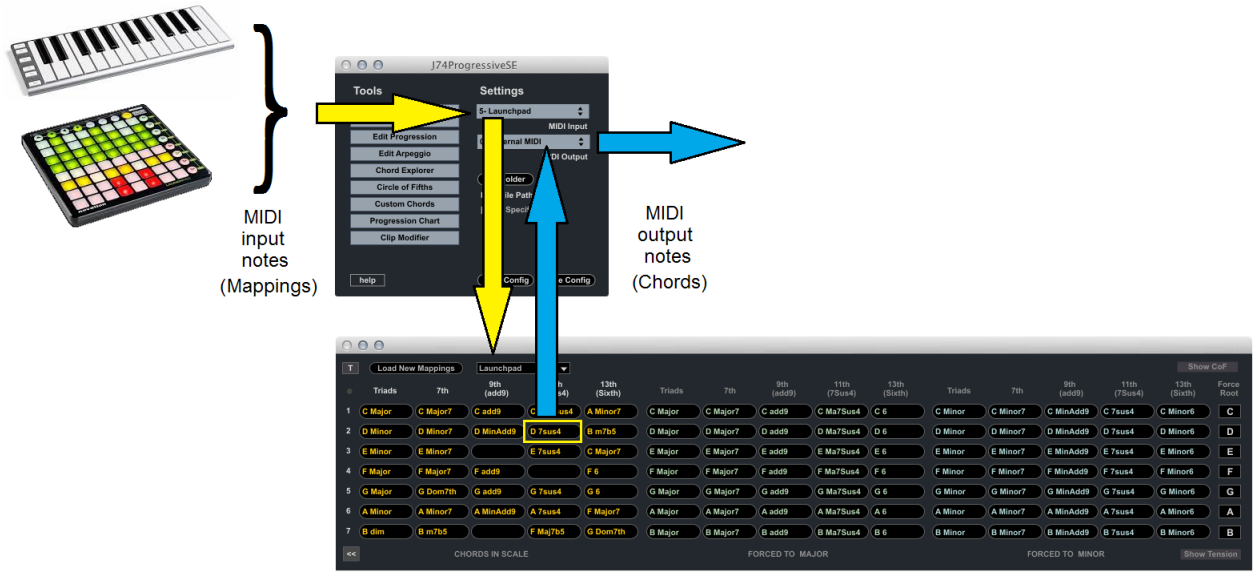
- *Grid Split*: this function "splits" the notes in the progression based on the *grid* length as defined by the [Grid] parameter. This function can be useful to split long, hold notes or chords into *rhythmical repetitions*. In particular this can produce interesting results if combined (*after clip commit)* with other functions: for instance the results of a [Grid Split] can be processed through a [Swing%], [Groove%], [Pitch] Rotation or [Distribute] to produce rhythmical changes or even harmonic rhythm

Tip: the Pitch Shifting function can be applied to the entire progression or to a portion of it. To select the area of interest, open the MIDI Clip Viewer using the [View Clip] button and select the area in the editor.

Appendix 1 - Chord Explorer MIDI Mappings

The chord buttons of the Chord Explorer respond to MIDI input notes. You can map them to a physical controller (like a Launchpad, a standard MIDI keyboard or anything which sends MIDI notes) and jam with them hands-on. This way you can come up with progressions while not looking at your computer screen.

The picture below visualizes this concept:



The idea is simple: each chord button is mapped to a specific MIDI note. When a MIDI note is received (see arrow in yellow) it triggers the corresponding chord and the notes of that chord are sent in output (arrow in blue). This way you can jam hands on and capture your performance directly from the MIDI output.

Important: as opposed to the use of the computer mouse, using MIDI input note mappings *does support MIDI velocity*. The velocity used for the input note is used for the chord output.

If you like you can combine the use of the Chord Explorer and of Live Mode together. For instance use Live Mode to trigger the basic progression and Chord Explorer buttons to add variations.

You can modify the default mappings by either loading a preset mapping from the [**Preset Mapping**] menu (for common controllers such as Launchpad or a traditional piano keyboard) or by loading a new custom mapping file using the [**Load New Mappings**] button.

To do the latter you must prepare a text file edited according to the following instructions.

The text file for the custom must be a simple list of button-to-note mappings. A mapping defines indeed the association of a chord button of the Chord Explorer to an incoming MIDI note. The definitions are made this way:

{**XYZ**} {**MIDI note number**}

- X is the chord shape type
  - X 1 : 1 is for triad
  - X 2 : 2 is for 7th
  - X 3 : 3 is for >>9
  - X 4 : 4 is for >>11
  - X 5 : 5 is for >>13
- Y is the chord category:
  - Y 0 : 0 is for diatonic
  - Y 1 : 1 is for forced to major / custom1
  - Y 2 : 2 is for forced to major / custom1
- Z is the degree

An example of line in the file would look like this: **312 61**

[J74_Chord_Explorer]
Load New Mappings
Show CoF
Triads 7th 9th (add9) 11th (7Sus4) 13th (Sixth)
1 C Major C Major7 C add9 C Ma7Sus4 A Minor7 C Major C Major7 C add9 C Ma7Sus4 C 6 C Minor C Minor7 C MinAdd9 C 7sus4 C Minor6 C
2 D Minor D Minor7 D MinAdd9 D 7sus4 B m7b5 D Major D Major7 D add9 D Ma7Sus4 D 6 D Minor D Minor7 D MinAdd9 D 7sus4 D Minor6 D
3 E Minor E Minor7 E 7sus4 C Major7 E Major E Major7 E add9 E Ma7Sus4 E 6 E Minor E Minor7 E MinAdd9 E 7sus4 E Minor6 E
4 F Major F Major7 F add9 F 6 F Major F Major7 F add9 F Ma7Sus4 F 6 F Minor F Minor7 F MinAdd9 F 7sus4 F Minor6 F
5 G Major G Dom7th G add9 G 7sus4 G 6 G Major G Major7 G add9 G Ma7Sus4 G 6 G Minor G Minor7 G MinAdd9 G 7sus4 G Minor6 G
6 A Minor A Minor7 A MinAdd9 A 7sus4 F Major7 A Major A Major7 A add9 A Ma7Sus4 A 6 A Minor A Minor7 A MinAdd9 A 7sus4 A Minor6 A
7 B dim B m7b5 F Maj7b5 G Dom7th B Major B Major7 B add9 B Ma7Sus4 B 6 B Minor B Minor7 B MinAdd9 B 7sus4 B Minor6 B
Force Root
CHORDS IN SCALE
FORCED TO MAJOR
FORCED TO MINOR
Show Tension
1
2
3

In this case the mapping says:

- X is set to 3 to signify a >>9 (9th or Add9) type of shape
- Y is set to 1 to refer to a forced to major / custom1 category of chords
- Z is set to 2 to represent degree nr. 2
- 61 is the MIDI note which will trigger the chord (61 is C#3)

Note: mappings do not support MIDI velocity or other type of messages (such as MIDI CC, MIDI sysex, etc.).

Default Mappings and full mapping example (directly comaptible with the Novation Launchpad)

Here an example of MIDI input mappings for the Chord Explorer. The values used here actually reflect the default settings of J74 ProgressiveSE, built-in when the device is loaded. These settings match the note generated by a Novation Launchpad. A text file example with these definitions is provided in the “J74 Progressive - Chord Explorer Mappings” included in the download pack.

To create your own mappings edit the provided Launchpad example so that it matches the MIDI notes used by your controller. In the definitions change only the MIDI note numbers.

```
// ****************************************************
// Lines starting with this sign are comments.
// ****************************************************
// Diatonic Triads
101 0
102 16
103 32
104 48
105 64
106 80
107 96
// Diatonic 7th
201 1
202 17
203 33
204 49
205 65
206 81
207 97
// Diatonic >>9
301 2
302 18
303 34
304 50
305 66
306 82
307 98
// Diatonic >>11
401 3
402 19
403 35
404 51
405 67
406 83
407 99
// Diatonic >>13
501 8
502 24
503 40
504 56
505 72
506 88
507 104
// ****************************************************
// Custom1 Triads
111 4
112 20
113 36
114 52
115 68
116 84
117 100
// Custom1 7th
211 5
212 21
213 37
214 53
215 69
```

```
216 85
217 101
// Custom1 >>9
311 9
312 25
313 41
314 57
315 73
316 89
317 105
// Custom1 >>11
411 10
412 26
413 42
414 58
415 74
416 90
417 106
// Custom1 >>13
511 11
512 27
513 43
514 59
515 75
516 91
517 107
// ******************************************************
// Custom2 Triads
121 6
122 22
123 38
124 54
125 70
126 86
127 102
// Custom2 7th
221 7
222 23
223 39
224 55
225 71
226 87
227 103
// Custom2 >>9
321 12
322 28
323 44
324 60
325 76
326 92
327 108
// Custom2 >>11
421 13
422 29
423 45
424 61
425 77
426 93
427 109
// Custom2 >>13
521 14
522 30
523 46
524 62
525 78
526 94
527 110
```

Issues and Questions

In case of issues please contact: info [at] fabriziopoce.com